@

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11,6 n 1

1. Edition

PE 6 P 100 A 320 RS 384 Z RQ 250/1100 PA 517 D

supersedes

DAF

company: engine:

DKL 1160

Port closing difference between control-rod travel 9 mm and control-rod travel 21 mm.

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
(3,15-3,35)
RW 9 mm (from BDC)

Rotational speed rev/min	Control rod travel nim 2	Fuel delivery cm ³ /100 strokes	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm
600	11,5+0,	10,9 - 11,2	0,5			
225	7,2-7,4	1,0 - 1,4				
1050	-	C. Sp. 4-5	0,3			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking of slider PRG check Control rod travel rev/min		Full-load speed regulation Setting point Control rev/min mm mm rev/min Full-load speed regulation Test specifications Control red travel rev/min		رب)	Setting p	Idle speed regulation Setting point Cantrol rev/min mm Test specifica Con travel rev/min mm			Control rod travel rev/min mm			
700	15,6-16,4	700	16,0	10,8	1140-1155	225	7,3	100 225	min.7,5 7,2-7,4	11	12	1
				4,0	1175-1205			325- 600	365=2,0 max.1,0			

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics 3b	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rad travel cm ³ /1000 strokes:/ mm 7	
600	109,5 - 112,5		1050	106,5 - 111,5	100	21,5	
						7,2	

Checking values in brackets

0

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 SCA 11.0 1. Edition

PE 6 P 90 A RS 276 ROV 250-1100 PA241

Port-closing test with/without ROBO diaphragm

aupersedes

Scania D 11 - 190 PS

company: engine:

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,6 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	12	8,5 - 9,2	0,4			2,5 ± 0,1 **
600	9 12 15	2,9 - 3,9 7,4 - 8,4 12,2 -13,5				(max.2,2-2,9)
200	9	1,8 - 2,8				

Adjust the fuel delivery from each outlet according to the values in ______ the delivery-valve spring pre-tension with In the case of greater dispersion alter the delivery-valve spring pre-tension

accordingly. B. Governor Settings

Upper rated :	speed			Intermediate	rated spe	eed	Lower rated	speed		Sliding sleeve travel	
deflection	Control	uevan ∕	5 /1	Degree of deflection of control		Control rod travel	Degree of deflection		Control rod travel		①
IOAR.	rod travel	rev/min			rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68	1150 1380 1100	15,0-18, 0 - 1, 15,0-17,	5	-	•	-	ca.10	200 300 400	5,8-8,0 3,1-4,4 2,6-3,6		0 -1,0 2,0-2,5 4,3-4,7
	1150 1200	10,2-13, 5,0-10,						500 600	1,8-3,0 0,8-2,0 -	1150	8,3
	1250 1320	0 - 5, 0					3 a)	780	0	-	-

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel delic high idle s	very characteristics (5a)	Starting Idle switchir		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travei mm
1080	142,0-144,0	1135-1145*	500	135,0-139,0	225	220 - 270 8 - 11 persion.max.	1,5)	9
					1200 disp	14 - 24 persion.max.4		

Checking values in brackets

*1 mm less control rad travel than col. 2



Testoil-ISO 4113



WPP 001/4 1. Edition

PE 8 P 120 A 920/4 RS3030

ROV 350/575-750 PA273R

company:

Rolls Royce

engine:

C 8 T (340)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 3,50-3,60

Port closing at prestroke

mrn (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
720	13,8	24,7 - 25,1	0,5(0,8)			
	(+0,1)					
350	6,0					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed	•	Sliding	leeve travel
Degree of deflection of control lever	rod travel	Control rod travel mm cev/min 2a	of control	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rav/min 10	1) mm
ca.68	750 790 860	15,0-18,6 0 - 8 0	ca.45	550 600 670 685	11,8-17,6 7,3-12,0 0 - 2 0		300 450 550 625	6,3-8,2 3,6-4,0 1,6-4,0	325 400- 750	0,4-1,5 500= 1,9-2,1 8,3

Torque control travel a =

C. Settings for Fuel injection Pump with Fitted Governor

Full-load de Control-rod Test oil ten		Rotational-speed 2b limitation intermediate speed			Starting idle switching		Torque- travei	control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ² /1000 strokes	rev/min	travel mm
-	-	3	-	5	6	<u> </u>	8	9
720	247,0-251,0 (244,0-254,0				100	ca.16 mm RW		

as in brackets

* 1 mm less control rad travel then col. 2

(**1**)

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

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WPP 001/4
1. Edition

PE 6 P 110 A 320 RS 328

RQV 300-1500 PA 303 R

aupersede

company:

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,5 + 0,1

mm (from BDC)

21 mm RW

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,0	17,3 - 18,0				·
600	6,0 15,0	5,2 - 6,4 10,7 - 22,6				
200	6,0	1,9 - 2,9				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	1		Intermediate	rated sp	eed	Lower rated	speed		Sliding sleeve travel	
	rev/min Control	Control rod travel	(1a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		①
of control lever	rod travel mm	mm rev/min	(2a)	of control lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.64	1540 1600 1700 1800	15,0-17 11,0-14 2,6- 9 0 - 3	,8				ca.11°	200 440 600 900	6,8-8,0 3,6-5,0 2,6-3,8 0 -1,2	1540	8,2
							<u>3a</u>				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics 58 speed 5b	Starting idle switchir		Torque- travel	Control rod
rev/min	cm³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
ca. 1	0 mm RW - Cai	1540 ry out adjust	ment (on engine				
	·					!		

Chucking values in brackets

*11 mm less control rod travel then ost. 2

Test Specifications Fuel Injection Pumps (A) and Governors

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WPP 001/4 PEN 7,0 e 1. Edition

En

PE 6 P 100 A 320 RS386

EP/RSV 200-1200 P 1/305R

supersedes

Volvo-Penta

company engine

MD 70 C

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,80-2,90

Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm²/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1000	8,6-8,7	7,2 - 7,4	0,4(0,8)			2,5±0,1
225	5,8-6,0	0,9 - 1,3	0,2(0,5)			(max.2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Interm	ediate rate	d speed	4 Lower rated speed			3 Torque coritiui	
Degree of deflection of control lever	travel mm	travel mm rev/min				Control- lever deflection	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	3	4	5	6	in degr∉es 7	8	9	10	111
loose	800	0,3-1,0				ca.27	225	5,4		
	X =	5,2					100 225	min 20		
ca .67	1270-13	250 = 7.6 300 = 4.0 300 = 1.7			•		335-395 550	5,8-6,0 = 2,0 0 - 1		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	6 Rotational- speed limitat.		uel delivery naracteristics	Starting t	Starting fuel delivery 5 4 Idle stop		
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to:) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm
1000	72,0 - 74,0 (69,0 - 77,0)	1240-1250*			100 225	210 - 260 10 - 14		

Checking values in brackets

* 1 mm less control rod travel than col 2

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 MWM 21,6 a 1. Edition

PE 12 P 120 A 520/5 RS 428

RSUV 300-1150 POA 324 DR

supersedes

MWM

company

D 234 V 12

1 - 2 - 9 - 10 - 5 - 6 - 11 - 12 - 3 - 4 - 7 - 8je $30^{\circ} \pm 0,5^{\circ} (\pm 0,75^{\circ})$

engine

330 kW (449 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,8-2,9

Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm²/ 100 strokes	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
1150	9,6-9,7	17,0 - 17,4	0,5(0,9)	2	3	6
300	6,5-6,7	2,8 - 3,6	0,8(1,2)			
						†

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

1 Uppe	r rated speed	rev/min	Interm	ediate rated	t speed	Lower rated speed			(3) To	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rad travel mm
loose	800	0,3-1,0	-	-	-	ca.22	300	6,1	1_	_
	x =	4,0					300	6,5-6,7		
ca.64	8,6 4,0 1400	1190-1200 1235-1265 0,3- 1,7					410-470			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp. 40°C (104°F)	Rotatronal- speed limitat	iel delivery paracteristics						
rev/min	cm ⁹ /1000 strokes	changed to .) rev/min 3	rev/min 4	cm ⁹ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min	Control rod travel mm 9	
1150	170,0-174,0 (167,0-177,0)	1190-1200*	•	-	100	240,0-260,0 / 15,8 - 16,0 mmRW	-	-	

Checking values in brackets

* 1 mm less control rod travel than col. 2

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Test Specifications Fuel Injection Pumps (A) and Governors

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WPP 001/4 PEN 7,0 g 1 1. Edition

En

PE 6 P 110 A 320 RS 390

RSV 200-1200 P4/305

Supersedes

company engine Volvo-Penta TD 70 GG

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

estoil-ISO 4113

3,0 - 3,1 (2,95- 3,15)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Difference cm ² / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pra-tensioning (torque-control valve) rim
700	11,3+0,1	10,0 - 10,2	0,4(0,8)			2,5 ± 0,1
200	6,1-6,3	1,7 - 2,7	0,25(0,55)			(2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

(1) Uppe	er rated speed		Interme	diate rate	speed	Lower rated speed			(3) To	orque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
loose	800	0,3-1,0	,	-	-	ca.20	200	5,7		
	x =	4,0					100 200	min.10,0		1
ca.70	10,3 4,0 1400	1240-1250 1250-1280 0,3 -1,7					200	6,1-6,3		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational-speed limitat Note: Rotational-speed limitat			Starting i	uel delivery (5)	(dele stop	
ŀ	cm ⁹ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ² /1000 strokes 5	rev/min	cm ² /1000 strökes 7	rev/min 8	Control rod travel mm
700	100,0-102,0 (97,0-105,0)	1240-1250*	-	-	100	10,0-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than ool 2

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung. € 1980 by Robert Bosch. GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en République Fédérale d'Allemagne par Robert Bosch. GmbH.

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 SCA 11,0 q 2. Edition

En

PE 6 P 110 A 720 RS 310

EP/RSV 350-1100 P 1/310 R

supersedes

сотрапу

Scania

engine

DSI 11

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

2,4 + 0,1

A. Fuel Injection Pump Settings

Port closing at prestroke

estoil-ISO 4113

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm (2)	cm ³ /100 strokes	100 strokes	mm	cm ² /100 strokes	mm
1	2	3	4	2	3	6
1000	14,0	19,3 - 19,5	0,6(0,8)			2,5±0,1**
	(±0,1)					(max.2,2-2,9)
350	5,5 (±0,1)	1,0 - 1,4	0,2(0,7)			
600	14,0 (+0,1)	19,4 - 19,8	0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in In the case of greater dispersion alter the delivery-valve spring pre-tension

B. Governor Settings

1 Uppe	er rated speed		Interme	diate rate	speed	4	Low	er rated speed	3 Torque control	
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mm
ca.67	1100 1150 1200	16,0 11,7 6,0	with auxi		sprin	ca.31	350 100 350	6,0 19 - 21 5,7-6,3		
29	1150 1200 1350	10,4-12,5 4,4- 7,8 0,3- 1,0	With		sprin	9	400 550	3,2-4,7 0 - 1		max.

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		iel delivery aracteristics	Starting t	fuel delivery 5	1dle stop	
Test oil to rev/min 1	emp. 40°C (104°F) cm ² /1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm\$1000 strokes	rev/min	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
1000	193,0-195,0 (190,0-198,0)	1140-1150*	600	194,0-198,0 (191,0-201,0) dis	1200	12 - 16 n max. 2,0 28 - 33 V5,5mm))**	

Checking values in h sokets

* 1 mm less control rod travel than col 2

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Test Specifications Fuel Injection Pumps 2 and Governors

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WPP 001/4 DAF 11,6 b 2. Edition

<u>En</u>

PE 6 P 90/320 RS142 PE 6 P 90A320 RS239 RQ 200/1000 PA98/1R

supersedes

8.72 D A F

company: engine:

DKDL 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8 + 0,1

mm (from BDC)

 $(^{+0,15}_{-0.05})$

					0,00	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	10,4 - 11,2	0,5			
600	9 12 15	4,5 - 5,9 9,1 - 10,8 14,0 - 15,9				
200	9	3,5 - 4,5				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checking PRG che rev/min 1	Control rod travel	Full-load s Setting po rev/min 3	•	•	cifications (4) rev/min	Idle spec Setting p rev/min 7	Control red travel mm	Test spe	cifications 5 Control rod travel mm	Torque o	Control rod 3
450	15,7-16,3	450	16,0	1050 1080 1120 1160	15,6-16,0 9,6-14,0 0 - 7,7 0 - 1		0	100 200 300 330	6,0-8,1 3,4-5,6 0 -1,6 0		

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever pp. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting (fuel delivery ed 1 Centre
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes 5	rev/min 6	red travel cm ³ /1000 strokes:/ mm
850	107,7 - 109,5 (105,5 - 111,5)			₽ ∩		

Checking values in brackets

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Test Specifications Fuel Injection Pumps ① and Governors

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WPP 001/4
1. Edition

En

PES 6 P 110 A 720/3 RS 3036

RQV 300/450-900 PA 372KR

supersedes

company:

Mack ETAY 673 A

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,35-2,45

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control velve) mm 6
900	15,2	22,8 - 23,0	0,6			
300	5,0	1,2 - 2,2	0,2			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated a	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding e	lacus traval
	rev/min Control rod travel mm 2	Control rod travel mm 28	Degree of deffection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	
 	-		•	3			8	9	10	11
ca.69	970 1050 1100 1200	15,5-18,0 7,0-11,6 1,7- 7,8 0	-	-	-	B .	250 300 600 700	9,8-11,3 7,5- 8,5 1,3- 2,5 0 - 1	500	0,2-1,2 4,0-4,4 6,3-6,7 8,3
				·		3 a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics (5a)	Starting Idle switchir		Torque- travel	control 5	
rev/min	cm³/1000 strokes .	rev/min 4a	rev/min	rev/min cm³/1000 strokes		cm ³ /1000 strokes	rev/min	travel mm	
1	2	3	4	5	6	7	8	9	
900	228,0-230,0	940-950*	725	234,0-238,0	100	110,0-170,0			
			600	228,0-232,0	300	14,0- 24,0			
				PLE:	300 0.74	94,0-109,0 0-0.820			

Checking values in brackets

🐔3 mm less centrol rod traval then col. 2



Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

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WPP 001 Fiat 13,8 e 2. Edition

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PES 6 P 120 A 820 RS3058

RQV 300-1300 PA454KR

aupersede

company:

2.80

engine:

Unic-Fiat 8220-02-142

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Tasters

A. Fuel Injection Pump Settings

Port closing at prestroke 3,60-3,70 mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1300	9,2-9,3	14,3 - 14,7	0,5(0,8)			
300 500/700	5,1-5,3 	1,7 - 2,3 C, 4-5	0 (0,7) 0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated a	peed			Intermediate	rated sp	ed	Lower rated	speed	Sliding sleeve travel		
deflection		Control rod travel	(b)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		. ①
	rod travel mm	mm rev/min	23	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68	1300 1550	15,2-17, 0 - 1	8	•	•	-	ca.14		'		1,0-2,0
	1 330	0 - 1						300	5,1-5,3	600	3,5-4,0
ca.60	8,2 4,0	1340-135 1410-144					320-430 3a		•	1320	8,3

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		intermediate speed				fuel delivery 6	Torque- travei	Control rod
rev/min	cfh³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ⁹ /1000 strokes	rev/min	travel mm ⊬.∵
1	2	3	4	5	6	7	8	9
1300	143,0-147,0 (140,0-150,0)	1340-1350*	500 700	103,0-109,0 (100,0-112,0) 123,0-129,0 (120,0-132,0)		150,0-170,0 20(80-240)	900 700	9,2-9,3 9,1-9,3 8,8-9,0 8,6-8,7

Checking values in brackets

? 1 mm less control and travel thes cel. 2

[estoil-ISO 4113]

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4
3. Edition

Eπ

PE 6 P 120 A 321 RS 359

RQV 250-1200 PA 254R

aupersedes

company:

3.78
Berliet

mgine:

MID 62030 (175 PS)

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3.45-3.65)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control vave) mm 6
1200	10,3	14,3-14,7	0,5(0,9)			
250	(+0,1) 5,65,8	1	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		In	Intermediate rated speed				Lower rated	speed			Sliding sleeve travel	
deflection	rev/min Control	TAVE:	ツ dg	egree of effection of control		Control travel	rod	Degree of deflection		Control rod travel			
	rod travel mm	rev/min (ever	rev/min 5	mm 6	①	of control lever	rev/min 8	١_ `	3) re	ev/min	mm
<u>'</u>	-		-∤ -		-	0		ļ'	<u> </u>	9			11
ca.68	1200 1450	15,2-17, 0 - 1	8	-		•	•	ca.13	100 250	min.7,2 5,6-5,8	3 8	300	0,3-1,1 4,3-4,7
ca.66	9,5 4,0	1240-125 1300-133							720	570=2,0 0 - 1		190	8,3
								3a					

Torque control travel a =

mn

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Rotational-speed 2b timitation intermediate speed	Fuel delivery characteristics Sa S Id			fuel delivery 6	Torque- travel	Control cod
rev/min	cm³/1000 strokes	rev/min 40	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1200	139,0-143,0 (136,0-146,0)	1240-1250*			100	140,0-190,0		
			ı		100	-170(80-190)		

Checking values in brackets

*1 mm less control rod travel then cel. 2

10.78

BOSCH

Beschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. Day Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany. Imprime en Republique Federale d'Allemagne per Robert Bosch, GmbH.

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4

Edition

PE 6 P 120 A 320 RS 341

ROV200-1100 PA 322 DR

company:

AEC

engine:

L 12

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

3,40-3,50 Cy1. 6 Port closing at prestroke mm (from BDC) Control rod travel Control rod travel Fuel delivery Difference Fuel delivery Spring pre-tensioning (torque-control-valve) Rotational speed cm³/ rev/min cm³/100 strokes 100 strokes cm3/100 strokes 1100 10,2-10,3 0,5(0,8)18.0 - 18.4

225 7,6-7,8 3.5 - 4.10,4(0,7)600/500 C, 4-5 0,7(1,0)

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeye travel
deflection	rodtravel		Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	(1)
1	2	3	4	5	6	7	8	9	10	11
ca.68	1100 1300	15,2-17,8 0 - 1,0				ca.29		min.9,2 7,6-7,8 190=2,0	225 425 1150	1,4 3,3-3,4 7,9
ca.58	9,3 4,0	1140-1150 1180-1210				3a				,,,

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel deli- high idle s	very characteristics 5a	Starting Idle switchin		Torque- travei	control 5
rev/min	cm³/1000 strokes .	rev/min 4a)	rev/min	cm³/1000 strakes	rev/min	cm ³ /1000 strokes	rev/min	travel mm: → →
1	2	3	4	5	6	7	8	9
1100	180,5-184,5 (177,5-187,5)		600 500	132,0-138,0 (129,0-141,0) 120,0-124,0 (117,5-127,5)	400	100,0-130,0 35,0- 41,0 150(80-170)	500	10,2-10,3 10,7-10,9 10,7-10,9

Checking values in brackets

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 9,8a 2. Edition

PES 6 P 110 A 820 RS381

RQV 225-1300 PA 430/2R

supersedes

1.79

engine:

Unic-Fiat X 200

All test apecifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 2,00-2,10

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve) mm 6
1300	9,6-9,7	10,2 - 10,4	0,4(0,8)			
225	6,8-7,0	1,6 - 2,2	0,4(0,7)		·	

Adjust the fuel delivery from each outlet according to the values in

B, Governor Settings

Upper rated s	peed	•	Intermediate	rated sp	eed	Lower rates	speed	•	Slidina s	leeve travel
deflection	rev/min Control	Control rod (s) travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		0
	rod travel mm	mm rev/min (28)	of control lever	rev/min	mm (of control lever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.68	1300 1600	15,2-17,8 0 - 1	-	- ·	-	ça.11	100 225 460-5	min.8,5 6,8-7,0 620= 2,0	225 450	0,8-1,0 2,8-3,2
ca.58	8,6 4,0	1340-1350 1425-1455			£		600	0 - 1	1350	8,5
					<u> </u>	3a				

Torque controi travei a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		limitation intermediate speed	Fuel deliv	rery characteristics (5a)	Starting idle switchir		Torque- travei	Control rod
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1300	102,0-104,0 (99,0-107,0)	1340-1350*		·	100	170,0-210,0		

Checking values in brackets

* 1 mm less control rad travel then cal. 2

2,79

①

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 PEN 10.0 c 1. Edition

PE 6 P 110 A 320 RS138

RQV 250-1100 PA401/2R

company:

Volvo-Penta HD 100 D

engine:

177 kW (240PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Renches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	8,6-8,7	8,7-8,9	0,4(0,8)			2,5±0,1** (max.2,2-2,9)
250	5,6-5,7	0,8-1,2	0,25(0,6)			
					3.	

Adjust the fuel delivery from each outlet according to the values in ______.

In the case of greater dispersion alter the delivery-valve spring pre-tension

B. Governor Settings

Upper rated s	speed	1	Intermediat	e rated sp	eed	Lower rated	speed		Chidos	iceve travel
deflection	rev/min Control rod travel	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control red travel	Silving a	①
	mm	rev/min (2	lever	rev/min	mm 4	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.50	1100 1400	15,2-17,8 0 - 1	3 -	-	_	ça.11	100 250	min.8,4 5,6-5,7	200	0,2-0,8
ca.45	7,6 4,0	1160-1170 1205-1230					345-3 500	65 = 2,0 $0 - 1$	1170	8,2
						3			•	-

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel delic high idle s	very characteristics (5a)	idle	fuel delivery 8	Torque- travei	control (5
rev/min	cm³/1000 strokes .	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min	cm ⁹ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
700	87,0-89,0 (84,0-92,0)	1160-1170*		dis	100 250 persi	300 - 340 10 - 14 on.max.2,5)	**	

Checking values in brackets

4.3 mm less control rod travel then col. 2

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps (2) and Governors

WPP 001/4 2. Edition

PE 6 P 100 A 720 RS 414

RQ 300/1175 PA 507

supersedes

company:

4.80 FBW

1 - 5 - 3 - 6 - 2 - 4

0 -60 -120-180-240-300

 $\pm 0,50(0,75)$

engine: CU 6 A

All test specifications are valid for Bosch Fuel Injection Pump Test Ben Ties and Testers

A. Fuel Injection Pump Settings

Port closing at prastroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1175	12.4	12.3 - 12.5	0,3(0,6)			
300 600	+0,1 8,1-8,3 -	1,7 - 2,3 C, Sp. 4-5	0,3(0,5) 0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che	• ()	Full-load : Setting po	oint	Test spec	cifications (4)	idle spec Setting p	•		cifications (5)	Torque o	control 3
rev/min 1	Control rod travel mm	rev/min 3	Control rad travel mm 4	Control red travel mm 5	rev/min 6	rev/min 7	Control rad travel rmrn 8	rev/min 9	Control rod travel mm	rev/min	travel
550	15,6-16,4	550	16,0	11,4	1220-1235	300	6,0	100	min.7,5	1175	12,4-12,5
				4,0	1285-1315			300 390-	5,9-6,1 430=2,0	600	12,4-12,6

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics 36	Starting f	duel delivery
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min	cm ³ /1000 strokes:/ mm
LDA 1175	0,7 bar 123,0 - 125,0 (121,0 - 127,0)		LDA 600	0,7 bar 116,0-120,0 (113,0-123,0)	100 300	120,0 - 140,0
			LDA 600	0 bar 81,0 -85,0 (78,0 -88,0)		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution
Famprigovernor	Gauge pressure =	bar Gauge pressure =	Control rod trave Composition XXXXXXXXXX bar mm (XX .
414 - 507	0,7 bar		12,6 - 12,7
		0,35	12,0 - 12,1
		0,25	11,1 - 11,3
		0	10,7 - 10,8

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

WPP 001/4

1. Edition

RQ 300/1100PA193DR

company:

supersedes

Saurer-Arbon

3028

RQV250-1100PA194DR

engine:

D2 KT290

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

PES 6 P 120 A 420RS 3028

Port closing at prestroke

(2.85 - 3.05)

mm (from BDC)

		<u> </u>				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,9	22,8 - 23,2	0,5(0,8)			
	(+0,1)					
1100/700	Section	C, col.4-5	0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ..193 DR

1 .	ck Control rod travel	Full-load s Setting po rev/min 3	•	•	rev/min	kdle spec Setting p rev/min 7	Control red travel		cifications 5 Control rod travel		Control rod (3) travel mm
600	15,6-16,4	600	16,0	10,9	1145-1160 1200-1240	ŀ		100 300	5,9-6,1	ļ	11,9-12,0 11,9-12,0
1120 1300								440 -	480=2,0		

Torque-control travel

0,3 _{mm}

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor d Test oil ten	elivery on ontrol lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting for Idle spee	Control
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	rad travel cm ³ /1000 strokes:/ mm 7
LDA 1100	0,7 bar 228,0-232,0 (225,0-235,0)		LDA 700 LDA 1100	0,7 bar 200,0-205,0 (197,0-208,0) 0 bar 178,0-184,0 (175,0-187,0)	100	170,0-190,0

Checking values in brackets

B. Governor Settings

Upper rated s	speed	1		Intermediate	rated spe	eed	Lower rated	speed	1	Siiding sl	eeve trave!
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	(a) (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min 10	(+0,1) mm 11
ca.68°	1100 1380 1145 1220	15,2-17 0 - ca.10,9 ca. 4,0	1				ca.12°	100 250 410-	mind.7,6 5,9- 6,1 490= 2,0	500	11,9 11,9
		0.6					(3a)				

Torque control travel a = 0,6

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-ree Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv character high idle s	istics	Starting Idle switchir	fuel delivery 6	Torque-	Control rod
rev/min	cm ³ /1000 strokes	rev/min (48)	rev/min	cm ³ /1000 strokes 5	.rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
LDA 1100	0,7 bar 228,0-232,0 (225,0-235,0)	1140-1150*	LDA 700	0,7 bar 200,0-205,0 (197,0-208,0		170,0-190,0		
			LDA 1100	0 bar 178,0-184,0 (175,0-187,0				

cing values in brackets

* 1 mm less control rod travel than co: 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	diministion Control rod travel- difference mm
3028 - 194DR 3028 - 193DR	0,68	0,22 0,13 0	11,9 - 12,0 11,3 - 11,5 10,5 - 10,6 10,1 - 10,2

En

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Testoil-ISO 41

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 DAF 8,3 h
2. Edition

n

PE 6 P 100 A 720 RS343

RQ 250/1200 PA331R EP/RSV 250-1200 P 0/417R./. supersedes

6.76

company:

van Doorne

engine:

DHU 825

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,5 + 0,1

mm (from BDC)

 $(^{+}_{-}0,15)$

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	11,4 - 11,7	0,5			
600	9 15	4,2 - 5,0 15,6 - 17,0				
200	9	1,9 - 3,3				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ ... 331 R

Checkin PRG che rev/min 1	Control rod travel	1	int Control	•	rev/min	Idle spee Setting p rev/min 7	coint Control rad travel	Test spe	cifications 5 Control rod travel mm		Control rod (3) travel mm
700	15,7-16,3	700	16,0	1220 1250 1320 1400	15,6-16,0 10,4-15,0 0 - 7,8 0 - 1		0	150 250 400 500	6,4-8,1 5,0-7,0 2,2-4,4 0	-	-

Torque-control travel on flyweight assembly dimension a =

mm

1245-1260 - 0,7 bar Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv		Starting f	
rev/min	cm ³ /-1000 strokes	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min	Control red travel cm ³ /1000 strokes:/ mm
LDA	0,7 bar		LDA	0 bar		
1000	127,0 - 130,0 (125,0 - 132,0)		500	89,0 - 93,0 (87,0 - 95,0)		
		·				./.

Checking values in brackets

The numbers denote the sequence of the tests

B. Governor Settings

EP/RSV . 417R

Degree of deflection of control lever	r rated speed Control rod travel mm 2		Intermed	diate rated		Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To rev/min 10	rque control Control rod travel mm
ca.55	1200 1300 1350	16,0 9,9 5,9	with auxi	out liary	sprin	ca.28	250 100 250	7,0 19 - 21 6,7-7,3	400 300	0 1,2-1,8
ca.53	1200 1300 1430	12,4-12,5 5,0- 6,8 0,3- 1,0	, ,,, -,,	liary	sprin	9	400 530	1,0-3,0 0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

II-load stop	6 Rotational- speed limitat. 3 Fuel delivery characteristics			Starting f	Starting fuel delivery 5 4a Idle stop			
emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm	
0,7 bar		LDA	0 bar					
127,0-130,0	1270-1280*	500	89,0-93,0					
	·							
	cm ⁹ /1000 strokes 2 0,7 bar	speed limitat. Note: changed to) rev/min 3 0,7 bar	cm ³ /1000 strokes changed to) cm ³ /1000 strokes changed to) rev/min 3 LDA	cmp. 40°C (104°F) cm³/1000 strokes 2 0,7 bar speed limitat. Note: changed to) rev/min 3 LDA cm³/1000 strokes 5 LDA 0 bar	speed limitat. Note: changed to) rev/min 2 0,7 bar Characteristics Idle rev/min cm³/1000 strokes 5 LDA Dar	speed limitat. Note: characteristics Idle	speed limitat. Note: changed to) rev/min 2	

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure incsessing XX

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	diminution Control rod travel- difference mm (1)
	Gauge pressure = bar	Gauge pressure – Dai	(1)
343 - 331R	0,49		- 0,1 - 0,2
+ 417R		0,23	
	·		

Notes:

(1) when n =

1000 rev/mirr and gauge pressure =

0,7

bar (= maximum full-load control rod travel)

En

2

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/4 FBW 11,9 a
1. Edition

<u>En</u>

PE 6 P 120 A 721 RS 446

RQ 250/1025 PA 619

supersedes

company:

FBW

engine:

EU 5 A/ESA

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.95-3.15)

mm (from BDC)

Rotational speed rev/min	Control rod travel • mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000 250		19,6 - 20,0 3,5 - 4,1	0,5(0,8) 0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min	Control rod	Full-load : Setting po	•	•	rev/min	Idle spec Setting p	Control red travel		cifications Control rod travel mm	Torque o	Control rod	3
550	15,5-16,4	550	16,0	9,8 4,0 1250	1070-1085 1135-1165 0 - 1,0		7,1	100 250	min.8,6 7,0-7,2	825	10,8-10,9 10,9-11, 11,5-11,	2

Torque-control travel on flyweight assembly dimension a =

U,5

1070-1085 min⁻¹

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop Gain Fuel delivery characteristics		(21)	Starting f	
rev/min 1	cm ³ /~1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	r ev/m in 6	Central rad travel cm ³ /1000 strokes:/ mm
LDA 1000	0,7 bar 196,0-200,0 (193,0-203,0)		LDA 600	0,7 bar 174,0-180,0 (172,0-182,0)	100	150,0-170,0
			LDA 600	0 bar 126,0-130,0 (123,0-133,0)		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

FBW 11,9 a

Test at n =

500

rev/min increasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel- difference
	Gauge pressure =	bar Gauge pressure =	bar mm (1)
PE6PRS 446	0,7		11,5 - 11,6
PA 619		0	9,4 - 9,5
•		0,5	10,9 - 11,0
		0,41	9,9 - 10,1
			·

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

40

WPP 001/\$ SAU 12,0 a

1. Edition

En

PES 6 P 120 A 420 RS 3063

RQ 300/1000 PA 515

supersedes

company:

Saurer D3 KT 80,1

1 - 4 - 2 - 6 - 3 - 5 je 60°

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Bump Settings

Port closing at prestroke

3.20-3.30

mm (from BDC)

Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,2	20,7 - 21,1	0,5(0,8)			
300 700/400	5,7-5,8 -	1,3 - 1,9 C, Sp.4-5	0,8(1,2) 0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	ck Control rod travel		control rod travel	Test spec Control rod travel	ر ب ا		coint Central red travel	Test spe	cifications Control rod		Control rod	3
1	2	3	mm 4	mm 5	rev/min 6	rev/min 7	mm 8	rev/min 9	mm 10	rev/min 11	12	
650	15,6-16,4	650	16,0	10,2	1045-1060	300	5,8	100	min.7,5	1000	11,2-11	,3
1250	0 - 1			4,0	1090-1120			300 380-42	5,7-5,9 20 = 2,0			

Torque-control travel on flyweight assembly dimension a =

mn

Speed regulation: At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de governor o Test oil ten	elivery on ontrol lever np. 40°C (104°F)	Control rod stop	Fuel deliv	ery characteristics	Starting f	ruel delivery 6
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min	red travel cm ³ /1000 strokes/ mm 7
1000	0,7 bar 207,0-211,0 (214,0-224,0)		400	0,7 bar 196,0-200,0 (193,0-203,0) 0 bar 119,0-123,0 (116,0-126,0)	100	230,0-240,0

Checking values in brackets

8.80

BOSCH

D. Adjustment Test for Manifold Pressure Compensator

-2-SAU 12,0 a

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting		Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1) .
3063 - 515	0,7 bar			11,2 - 11,3
			0,38	11,1 - 11,2
			0,25	10,0 - 10,1
			0	9,7 - 9,8

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11.6 n 2. Adition

PE 6 P 110 A 320 RS 407

RQ 250/1100 PA 428/2R

supersedes

10,79

company:

DAF 1160

Se Service Information I-DAF 004!

engine: (185kW-252PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection P

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
850	12,3-12,4	13,9 - 14,1	0,4(0,8)			
250	7,0-7,2	0,9 - 1,3	0,4(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	ck Control rod travel	Full-load s Setting po rev/min 3	•	•	rev/min	Idle spec Setting p rev/min 7	Control red travel		cifications 5 Control rod travel mm	rev/min	Control rod (3) travel mm
700	15,6-16,4	700	16,0		1145-1160	250	7,1	100	mind.8,5	-	-
1350	0 - 1,0			4,0	1200-1230			250 345- 450	7,0-7,2 385=2,0 0 - 1		

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	telivery on control lever mp. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d 6
rev/min 1	cm ³ /-1000 strokes	rev/min 3	rev/min 4	cm ³ /-1000 strokes	rev/min	red travel cm ³ /1000 strokes:// mm 7
LDA 850	0,5 bar 139,5-141,5 (136,5-144,5)		LDA 600	0 bar 135,5-138,5 132,5-141,5)	1	245,0-285,0 lectromagnet 24V 11 - 15

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n =

600

rev/min decreasing pressure – in bar gauge pressure

DAF 11,6 n

Pump/governor	Setting		Measurement		diminution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure =	bar	mm (1) .
RS 407 -	0,7				12,3 - 12,4
PA 428/2R			0,3	·	12,1 - 12,2
			0		12,0 - 12,1
					•

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

estoil-ISO

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4

supersedes

engine:

3. Edition

PE 6 P 100 / 720 RS145, 202 RQV 250-1100 PA53,168 RS145Z

PA106

RS145, 202 RS145Z,202Z PA153, 167 PA153, 167

5.75 company:

Scania **DS 11 A**

Port closing test with/without ROBO diaphragm

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,6 + 0,1

mm (from BOC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	11,6 - 12,1	0,5			2,5±0,1**
600	9 12 15	3,7 - 4,9 9,5 - 10,9 15,0 - 16,8				(max.2,2-2,9)
200	9	2,4 - 3,4				

Adjust the fuel delivery from each outlet according to the values in _____.

In the case of greater dispersion alter the delivery-valve spring pre-tension.

B. Governor Settings

RQV .. 58, 106, 153, 167

Upper rated	speed		Intermedia	te rated sp	eed	Lower rated	speed		Stidion	leeve travel
Degree of deflection of control	rev/min Control rod travel	L MAAGI /	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Silvinga	1
lever	mm	rev/min	lever	rev/min	mm (4)	iever	rev/min	mm ③	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca.66	1100 1150 1200 1230 1310	14,0-16, 9,2-13, 3,6- 9, 0 - 7,	3 6			ça.10	210 270 370 430 570 650	5,7-8,0 3,4-6,0 2,2-3,8 1,4-2,7 0 -1,2	1100	8,4

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel delic high idle s	very characteristics 5a poeed 5b	Starting Idle switchin		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm²/1000 strokes	rev/min	travel mm
LDA 1100 (14,5	0,5 bar 159,0-161,0 ± 0,5mmRW)	1120	LDA 600 LDA 500	0,5 bar 154,0-158,0 0 bar 128,0-132,0	225	190 - 240 9 - 13 rsion max.1,	8 5)**	9
(inc	rease by 1,0 (m³)			1200	39 - 44 ersion max.4)		./.

Checking values in brackets

SCA 11,0 i

B. Gov	ernor	Settin	gs			RQV 16	58 		SU.	A 11,0)]
Upper rated: Degree of deflection of control lever	rev/min Control rod travel mm	Control rod travel mm rev/min 3	(a) (2a)	Intermediate Degree of deflection of control lever	rated spe rev/min 5	Control rod travel mm 4	Lower rated Degree of deflection of control lever 7		Control rod travel mm 3		mm
ca.66	1120 1200 1300 1410	15,0-17 9,2-13 1,0- 7 0	,6	-	-	-	ca.10	150 250 400 500	6,5-8,0 3,6-6,1 1,1-2,4 0	1120	8,3

Torque control travel a =

Ppe 145Z Ppe 202Z

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem rev/min	stop p. 40°C (104°F) 2	Rotational-speed (2b) timitation intermediate speed (4a)	Fuel delivingh idle s	ristics	ldle switchir		Torque travel rev/min	Control cod travel mm
LDA 1100 (13,5	0,5 bar 144,0-146,0 ± 0,5 mmRW)	1120	LDA 500	0 bar 128,0-132,0	225 dispe 1200	190 - 240 9 - 13 rsion max.1,5 39 - 44 ersion max.4)		

Checking values in brackets

* 1 mm less control rod travel than co: 2

D. Adjustment Test for Manifold Pressure Compensator

rev/min decreasing pressure - in bar gauge pressure increasing. Test at n = 500

	XXXXXXX		
Pump/governor	Setting	Measurement	Control rod travel-difference (1)
·	Gauge pressure = bar	Gauge pressure = bar	mm (2)
145 - 58 202 - 168	0,26-0,28	0,14-0,17	-0,1 (1) -1,0 (1) ca.1,2 (2)
145 - 153 ₂ 202 - 167	0,40-0,44	0,24-0,28	-0,1 (1) ca.1,2 (2)
145Z - 106	0,19-0,22	0,15-0,18	-0,1 (1) -0,4 (1) ca.0,6 (2)
145Z - 153 202Z - 167	0,19-0,21	0,14-0,16	-0,1 (1) -0,4 (1) ca.0,6 (2)

En

Testoil-ISO 4113

estoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 SCA 11,0 p 6. Edition

PE 6 P 110 A 720 RS 3017 RS 3014

RQV 200-100 PA 283KR EP/RSV 350-1100 P 1/310R./.

supersedes 2.76

company:

Scania

engine:

DS 11

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,3 + 0,1

mm (from BDC)

 $\binom{+0,15}{-0.05}$

				·	70.00	
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	13,5-14,1	0,5			2,5 + 0,1 (max.2,2-2,9)**
600	15	19,7-21,4				(max.2,2-2,9)**
200	9	4,2- 5,2				

Adjust the fuel delivery from each outlet according to the values in

In the case of greater dispersion alter the delivery-valve spring pre-tension

B. Governor Settings

RQV .. 283KR

Upper rated	speed		Intermediate	rated sp	eed	Lower rated	speed		Clidian	to our Around
Degree of deflection of control lever	rev/min Control rod travel mm	Control rod ta travel mm rev/min (2a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travei		loave travel
1	2	3	lever 4	rev/min 5	mm (4)	lever 7	rev/min 8	mm (3)	rev/min	mm 11
ca.64	1130 1200 1250 1310 1410	15,0-17,0 9,2-13,6 5,3-10,8 0 - 7 0		-	-	ca.13	90 180 270 300 400 500	7,4-8,0 5,8-8,0 2,8-5,4 2,3-4,2 1,3-2,3	200 500 900 1120	0,2-1,3 3,8-4,4 6,2-6,6 8,3

Torque control travel a =

mn

- Section C, col. 8

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		intermediate speed			idle	fuel delivery 6	Torque- travel	Control ro
rev/min 1	cm³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strakes	rev/min	cm ³ /1000 strokes	rev/min	travel mm:
·		J	•	5	6	17	8	9
LDA	0,7 bar	440	LDA	0,7 bar	100	190 - 240	1100	13,5
850	156,0-158,0	1135-1145*	1100	175,0-181,0				12,7
			LDA	0 bar	225	9 - 13**		12,8
			500	400 0 409		sion <u>max. 2</u>	600	12,9
			300	133,0-137,0	1200	25,5-35,5		
				d	isper	sion max.4		./.

Checking values in brackets

11 mm less control rad travel then col. 2

BOSCH

B. Governor Settings

EP/RSV .. 310R

	r rated speed	rev/min	Interm	ediate rate	d speed	①	Low	er rated speed	3 To	rque control
Degree of deflection of control lever	travel mm	travel mm rev/min 3		_	1_	Control- lever deflection in degrees	rev/min	travel mm	rev/min	Control rod travel mm
-	-	13	4-	5	6		8	9	10	11
ca.67		16,0				ca.31	350	6,0		
	1150	11,7	with	out iliary	conin]	100	19 - 21	7	
	1200	6,0	7	lilary	2ht mi		350	5,7-6,3		
(2a)	1150 1200	10,4-12,5 4,4- 7,8	with auxi	n iliary	spring		400 550	3,2-4,7 0 - 1		
	1350	0,3-1,0		<u>.</u>	٠, ١١١					1

C. Settings for Fuel Injection Pump with Fitted Governor

W	ill-load stop	6 Rotational- speed limitat.		iel delivery paracteristics	Starting t	fuel delivery 5	4a idle stop	
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	Control rod travel mm
1100	161,0-163,0	1135-1145*	600	162,5-165,5	100 350	190-240 10- 14)**		
			1200 dispe	28,0- 33,0 rsion max.4)	dispe	rsion max. (4)	2	

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. .. djustment Test for Manifold Pressure Compensator

Test at n =

Testoil-ISO 4113

850

rev/min decreasing pressure - in bar gauge pressure YYYXXXX

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
3017 - 283KR	0,40 - 0,42		0,1-
Ü		0,20 - 0,24	1,0

Notes:

(1) when n =

1100 rev/min and gauge pressure = 0,7

bar (= maximum full-load control rod travel)

En

0

festoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 SCA 8.0 c 1. Edition

PE 6 P 110 A 720 RS 3012 PE 6 P 110 A 720 RS 3013 RQV 200-1200 PA 275 EP/RSV 350-1200 P1/310 supersedes

company:

Scania

engine:

DS 8

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	11,5 - 12,0	0,6		·	2,5 ± 0,1**
600	15	15,9 - 17,4				(max.2,2-2,9)
200	9	2,3 - 3,3				
	e case ordingly.		rsion alt	er the d	elivery-valve s	pring pre-tension

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQV .. 275

Upper rated a	peed			Intermediate	rated spe	eed	Lower rated	speed		Sliding	leeve travel
deflection	rev/min Control rod travel	Control rod travel	(a)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Girdining a	0
lever	mm	rev/min	(28)	lever	rev/min	mm (4)	lever	rev/min	mm (3	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.66	1240 1300 1430 1590	15,0-17 11,3-14 2,2-8	,9	-	-	-		100 250 400 530	6,4-8,0 3,9-6,0 1,7-3,2	300 600 240	1,6-2,4 4,3-4,6 8,2
							3 a			-	-

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		. 2 limitation intermediate speed		very characteristics 5e	Starting idle switchis		Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ⁸ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 1200	0,7 bar 115,0-117,0	1245-1255*	LDA 600 LDA 500	0,7 bar 113,5-116,5 0 bar 81,0- 85,0	225	190,0-240,0 <u>9,</u> 0- 13,0 ersion max.1,		
(incr	ease by 2,0 cr	1 ³)			1220 disp	36,5 -46,5 ersion max.4)		./.

Checking values in brackets

* 1 mm less control rod travel then cel. 2

The numbers denote the sequence of the tests

SCA 8,0 c

B. Governor Settings

EP/RSV ... P1/310

1 Uppe	r rated speed		interme	diate rated	i speed	(4)	Lowe	rated speed	(3) To	rque control
Degree of deflection of control lever 1	Control rod travel mm	Control rod travel mm rev/min 3	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
ca.71	1200 1250 1300	16,0 11,9 6,3		nout iliary	sprin	ca.31	350 100 350	6,0 19 - 21 5,7-6,3		
29	1250 1320 1420	10,8-12,4 2,4-6,0 0 - 1	with aux	n iliary	sprin	g	400 520	5,7-6,3 3,3-4,5 0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	6 Rotational- speed limitat.	nal- mitat. Fuel delivery characteristics			Starting fuel delivery 5 4 Idle stop			
Test oil to rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min	rev/min	cm ³ /1000 strokes 5	rey/min	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm	
1200	115,0-117,0	1230-1240*	600	113,5-116,5	1300	190,0-240,0 9 - 13 rsion max.1 :6 mmRW rsion max.4	,5)**		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Adjustment Test for Manifold Pressure Compensator

Test at n =

Testoil-ISO 4113

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = t	ar Gauge pressure = bar	mm (1)
3012 - 275	0,40 - 0,42		- 0,1
		0,20 - 0,24	- 1,1
•			

Notes:

(1) when n =

600 rev/min and gauge pressure =

0,7 bar (= maximum full-load control rod travel)

En

Testoil-ISO 4113

40

WPP 001/4
3. Edition

PE 6 P 120 A 320 RS348

RQV 250-1200 PA321R EP/RSV 300-1200 P2/408R supersedes_

company: Berliet

engine: MIDS 062 030

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,75-2,95) mm (from B

		(4,70-4,30)	(
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
1200	12,3	17,6 - 18,0	0,4(0,8)			
250 500/300	+0,1 4,7-4,9 	1,1 - 2,0 C, 4-5 -	0,4(0,7) 0,6(1,0			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed			Intermediate	rated sp	eed	Lower rated	speed	'		
Degree of deflection of control lever		Control rod (travel mm rev/min (3	(1) (28)	Degree of deflection of control lever	rev/min 5	Control red travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3		mm
ca.68	1200 1480	15,2-17 0 - 1	,8				ca.15	100 250	min.7,3 4,7-4,9 55 = 2,0	250	0,4-1,5
ca.65	11,3 4,0	1240-12! 1320-13!						800	0 - 1	600 1130	2,9 - 3,6 8,3
·							3		_	-	

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten	elivery d stop np. 40°C (104°F) 2	Rotational-speed 2b limitation intermediate speed			Starting Idle switching	• •	Torque- travel	Control Cod	
rev/min 1	cm ³ /1000 strokes .	rev/min 4a	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ² /1000 strokes	rev/min 8	travel mm	
LDA 1200	0,45 bar 176,0-180,0 (173,0-183,0)	1240-1250*	LDA 500	0,45 bar 91,0-97,0	100	110,0-130,0			
	(173,0-163,0)		LDA	(88,0-100,0) 0 bar	250	11,5- 19,5			
			350	54,0-58,0 (51,0-61,0)	100- (80-1	170 90)		./.	

Checking values in brackets

7 1 mm less central rad travel then cal. 2

9.78

BOSCH

Geschäftsbereich KH. Kundendienet. Kfz-Auerüstung. D by Robert Bosch GmbH. D-7 Stuttgart 1, Postfach SO. Printed in the Federal Regulatic of Germany mprime en République Fédérale d'Allemagne per Robert Boach GmbH.

B. Governor Settings

Degree of deflection of control laver	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interm	ediate rate		Control- lever deflection in degrees 7	Low rev/min 8	cer rated speed Control rod travel mm	3 To	Control rod travel mm
ca.50	1150	16,0				ca.21	300	4,8		
•	1250 1340	10,8 4,8		nout iliary	spring	3	150	19 - 21	-	
29	1250 1350 1500	10,4-11,2 3,6- 5,1 0,3- 1,0	with				300 450 640	4,5-5,1 2,0-3,4 0 - 1		

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

U	ull-load stop emp. 40°C (104°F)		Rotational-speed limitat. Speed limitat.		Starting Idle	fuel delivery 5	4a Idle stop		
rev/min 1	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min	Control rod travel mm	
See	page 1	1240-1250*							

Checking values in brackets

* 1 mm less control rod travel than col. 2

. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel-
	Gauge pressure = bar	Gauge pressure = bar	difference mm (1)
348 - 321 R 348 - 408 R ⁾	0,41	0,20 . 0,17 0	12,3 - 12,4 11,8 - 11,9 11,3 - 11,5 11,0 - 11,1

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

En

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 1. Edition

En

PE 6 P 100 A 720 RS 414

RSV250-1175 P1/473

supersedes company

FBW

engine

Cu 6 A

1 - 5 - 3 - 6 - 2 - 4

0 - 60-120-180-240-300

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,80-2,90

mm (from BDC) RW 10,5

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)		
rev/min 1	2	3	4	2	3	6		
1175	12,4	12,6-13,0	0,5(0,8)					
250 600 600	+0,1 8,3-8,5 	c, Sp 4-5 c, Sp.4-5	0,8(1,2) 0,7(1,0) 0,6(1,0)					

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	diate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm 11
loose	800	0,3-1,0				ca.22	250 250 495-55	8,4 8,8-9,0 5 = 2,0		
ca.61	1215-12 1290-13 1450= 0	225 =11,4 320 = 4,0 3,3-1,7								

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp. 40°C (104°F)	Rotational- speed limitat	Fuel delivery characteristics		Starting fuel delivery 5		Idle stop	
rev/min	cm³/1000 strokes	changed to) rev/min 3	rev/min	cm3/1000 strokes	rev/min	cm ³ /1000 strokes 7	rev/min	travel mm 9
LDA 1175	0,7 bar 126,0-130,0 (123,0-133,0)		LDA 600	0,7 bar 119,0-123,0 (116,0-126,0)	100	150,0-170,0	250	8,9

Checking values in brackets

11.80

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung c. 1980 by Robert Bosch GmbH. Postfach 50, D-7000 Stuttgart 1. Printed in the Federal Republic of Germany Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

Testoil-ISO 4113

^{* 1} mm less control rod travel than col 2

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	Control rod travel-
	Gauge pressure = bar	Gauge pressure = bar	difference mm (1)
414 ~ 473	0,7 bar		12,5 - 12,6
		0,35	12,4 - 12,5
		0,25	12,0 - 12,1
		0	11,6 - 11,7

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control re * 'ravel)

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 PEN 7,0 d
1. Edition

En

(1)

PE 6 P 110 A 320 RS 374

RSV 200-1200 P 1/305R 200-1000 company Volvo-Penta TMD 70 C (1)

MD 70 G (2)

engine

Setting values for the governor

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke (2,95-3,15)

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	10,5	9,1 - 9,3	0,4(0,8)	10,5	9,3 - 9,5	n = 1000
200	+0,1 8,6-8,7	1,7 - 2,7	0,4(0,7)	+0,1 8,6-8,7	1,7 - 2,7	2,5±0,1** (max.2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in E

B. Governor Settings

Testoil-ISO 4113

200-1200 (1)

Degree of deflection of control lever	r rated speed Control rod travel mm		Interme	diate rate	speed	Control- lever deflection in degrees	Lower rev/min	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800 x =	0,3-1,0 5,2		<u> </u>	<u> </u>	ca.26	200 100 200	8,1 min.20 8,6-8,7		
ca.68	9,5 4,0 1400	1240-1250 1295-1325 0,3- 1,7					390-46 550			

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting f	uel delivery 5	4a idi	e stop
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm\$1000 strakes	rev/min	cm\$1000 strokes	rev/min	Control rod travel mm 9
1200	91,0 - 93,0 (88,0 - 96,0)	1240-1250*		dis	200 1310 persio	19,0-29,0 4,0-4,1mm n max.4 (9	RW }	

Checking values in brackets

* 1 mm less control rod travel than col 2

5.79

BOSCH

Geschaftsbereich KH. Kundendienst. Kfz-Ausrustung r. 1980 by Robert Bosch GmbH, Postfach 50, D-7000 Sluttgart 1. Printed in the Federal Republic of Germany Imprime en République Federale d'Allemagne par Robert Bosch GmbH. **B.** Governor Settings

200-1000

14 , 1	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7		rated speed Control rod travel mm	To rev/min	rque control Control rod travel mm 11
loose	800 x	0,3-1,0 = 4,3				ca.22	100	8,1 min.20		
ca.53	9,5 4,0 1200	1040-1050 1095-1125 0,3-1,7					200 390-45 550	8,6-8,7 0 = 2,0 0 - 1		

Testoil-ISO 4113

C. Settings for Fuel Injection Pump with Fitted Governor

Θ	ill-load stop	speed limitat. Chara		speed limitat. Characteristics		Starting f	Starting fuel delivery 5		1dle stop	
Test oil to rev/min 1	cm ³ /1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control root travel mm		
1000	93,0-95,0 (90,0-98,0)	1040-1050*			200 1110 cisper		RW (9)			

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever	crated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interm	lever travel deflection in degrees				Control rod travel mm	3 To	rque control Control rod travel mm
29										

C. Settings for Fuel Injection Pump with Fitted Governor

	il-load stop emp. 40°C (104°F)	Rotational- speed limitat.		nel delivery paracteristics	Starting f	uel delivery 5	4a) idi	Stop
rev/min	cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
			•			•		
				•				

Checking values in brackets En

* 1 mm less control rod travel than col. 2

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 1. Edition

PES 6 P 110 A 720 RS337

EP/RSV 400-1050 P 0/416DR

supersedes =

John Deere

6619 T

dimension H = 28,0 mm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,80-2,90 Port closing at prestroke (2,75-2,95)

mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min 1	mm 2	cm¥100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes	mm 6
1050	10,2	13,5 - 13,7	0,4			
400	6	2,1 - 2,7	0,4			
Port clo	sing mark c	v1. 1 : 14° af	ter port c	losing		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Interme	diate rated	speed	Control- lever deflection in degrees	Lower	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.39	1050 1100 1150	3,6- 5,6	ļ	out aux		ca.20 y spring	400 100 400	6,8 19 - 21 6,8	1050 750 630	0 0 0 0,5
23	1200 1250	0,3- 2,9 0,3- 1,5	with	auxil	iary s	pring	520- 580	2		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

W	ull-load stop emp 40°C (104°F)	Rotational- speed limitat		uel delivery iai acteristics	Starting t	fuel delivery 5	4a id	le stop
rev/min 1	cm³/1000 strokes 2 ±2	Note. changed to) rev/min 3	rev/min 4	cm³/1000 strokes	rev/min	cm\$1000 strokes	rev/min 8	Control rod travel mm
LDA 1050	1,0 bar 135-137	1095-1105 (1090-1110)	1150	45 - 55	100	min 190	400	21,0-27
630 550	145-149 114-122						Cm ³ /	1000 Stro
550	114-122							

Checking values in brackets

* 1 mm less control rod travel than col 2

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure XXXXXX

Pump/governor	Setting Gauge pressure = bar	Measurement Gauge pressure = bar	diminution Control rod travel- difference mm (1)
Manifold-pressure compensator setting	0,68-0,72	0,16-0,24	
Switching point	max. 0,76	min. 0,48	

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

unlocking n=350-450/min

WPP 001/4 SCA 11.0 k 2

SCA 11,0 k (7,71)

1. Edition

PE 6 P 90/720 RS 147, 206 EP/MZ 80 P 3 R

supersedes

RS 149, 205 EP/MZ 80 P 4 R

Scania company

Port-closing test with/without ROBO diaphragm |

D 11 engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2.6 + 0.1

mm (from BDC) (+0,15)

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Rotational speed rev/min	Control rod travel	Fuel delivery cm ³ /100 strokes	Difference cm ³ / 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
1	2	3	4	5	6	7
1000	12	8,5 - 9,2	0,4			2,5±0,1* (max.2,2-2,9)
600	9 12 15	2,9 - 3,9 7,4 - 8,4 12,2 -13,5				
200	9	1,8 - 2,8				

Adjust the fuel delivery from each outlet according to the values of the delivery-valve spring pre-tension

	Leakage		limitatio					Auxiliary spring auxiliary cam**		Torque control	
Torque control travel	Vacuum pressure drop	Time at least		Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel	Vacuum	Control rod travel	
um	mm water col.	s	mmw.c.	mm	mm w c.	mm	mm w c.	mm	mmw.c.	mm	
1	<u> 2</u>	3	4	5	6	7	8	9	10	11	
= rotational sp adjust breakay	2000 - 1700 rel test (cols. 4- eed 500 rev/mir vay (cols. 4-5) tot (8 8-9 - C 7-4	n. Dy means	of shim:	5 *	335 370 400 440 480	3,5-14,5 7,8-11,4 4,4-6,6 3,7-6,0 3,0-5,3	415	4,1-6,3	-	-	

C. Settings for Fuel Injection Pump with Fitted Governor

	stop screw emp. 40°C (104°	PF)	Fuel deli	very character	istics	idle (sto) idle (imb		Control road travel from full-load to
rev/min 1	Vacuum mm wat. col 2	cm ³ /1000 strokes 3	rev/min 4	Vacuum mm wat. col. 5	cm ³ /1000 strokes	rev/min	Vacuum mm wat col	idle mm cm ³ /1000 strokes 8
1080	0	142,0-144,0 (140,0-146,0)	600	0	135,0-139,0 (133,0-141,0)	1200	rsion max	16-22

Checking values in brackets

2

estoil-ISO 411

Test Specifications Fuel Injection Pumps ② and Governors

40

WPP 001/4 DAF 11,6s 1
1. Edition

En

PE 6 P 100 A 320 RS 384 Z RQ 250/1100 PA 574

supersedes

company: DAF

engine:

DKL 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,2 - 3,3

mm (from BDC)

RW 9 mm FB Diff. 9 mm

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11.5	10.9 - 11.2	0,5			
1050	+0,1 10,8-11,1	10,6 - 11,1				
225	7,2-7,4	1,0 - 1,4	0,3			
						_

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

	g of slider	Full-load s	speed re	gulation		idie spec	d regula	ition		Torque o	control	
PRG che rev/min 1	Control rod travel	Setting po rev/min 3	oint Control rod travel rmrn 4	Test spec Control red travel mm 5	rev/min	Setting property of the set of th	Control red travel	rev/min	cifications Control rod travel mm 10	rev/min 11	Control rod Travel	3)
700	15,6-16,4	700	16,0	10,8	1140-1155	225	7,3	100	min.7,5			1
				4,0	1175-1205			225	7,2-7,4			
1400	0 - 1							325-				
								600	0 - 1			

Torque control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	uel delivery d Gantre
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes / mm 7
1050	106,5-111,5 (104,0-114,0)		600	109,5-112,5 (108,0-113,0)	100	21,5 19,5-21,0 RW
					225	7,2

Checking values in brackets

11.80

BOSCH

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 2 and Governors

WPP 001/4 DAF 11,6 s 2 1, Edition

PE 6 P 100 A 320 RS 384 y

RQ 300/1100 PA 574

supersedes company:

DAF

engine:

DKL 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,2 - 3,3

mm (from BDC)

RW 9 mm FB.Diff 9 mm RW

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
600	11,5	10,9-11,2	0,5			
	+0,1					
1050	10,8-11,1	10,6-11,1				
225	7,2-7,4	1,0-1,4	0,3			
•						

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

PRG che	Control rod	Full-load Setting p	Control Control rad travel) 	Idle speed regulation Setting point Cantral rev/min mm rev/min mm 7 8 9 10		rev/min	Control rod travel mm	3		
700	15,6-16,	4 700	16,0	10,9	1140-1155	225	7,3	100	min.7,5 7,2-7,4	11	12	
1400	0 - 1			4,0	1175-1205			325-3 600	65=2,0 0 - 1			

Torque-control travel on flyweight assembly dimension a =

Speed regulation: At

1 mm less control

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on cocritrol lever np. 40°C (104°F)	Control rod stop 3a	Fuel delive	ery characteristics	Starting f	
v/min 1	cm³/-1000 strokes 2	rev/min 3	rev/min	cm ³ /-1000 strokes	rev/min	Control red travel cm ³ /1000 strokes;/ mm 7
1050	106,5-111,5 (104,0-114,0)		600	109,5 - 112,5 (108,0 - 114,0)	100	21,5 19,5-21,0 RW
					225	7,2
		,				
			•			

Checking values in brackets

11.80

Test Specifications Fuel Injection Pumps (A) and Governors

VDT-WPP 001/4 2. Edition

PES 6 P 100 A 720 RS 1010

EP/RSV 400-1050 P2/411D

supersedes

John Deere

P2/412D

company engine:

6531

P7/413D

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers A. Fuel Injection Pump Settings

Port closing at prestroke 2,4. + 0,1

Testoil-ISO 4113

mm (from BDC) (_0.05)

Rotational speed	Control rod .	Fuel delivery	Difference	Control rod	Fuel delivery	Spring pre-tensioning
rev/min 1	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm ⁹ /100 strokes	mm 6
1000	12	12,7 - 13,4	0,5		,	
600	9 12 15	5,6 - 6,8 11,6 - 13,2 17,2 - 19,0				
200	9	4,0 - 5,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

EP/RSV .. P2/411D

Degree of deflection of control lever	travel mm 2	d rev/min Control rod travel mm rev/min 3	Interme	ediate rate	speed	Control- lever deflection in degrees 7	Lowe rev/min 8	Control rod travel mm	3 To	crque control Control rod travel mm
ca.38	1040 1080 1220	16,0 11,5 4,6	with	out liary	cnrin	ca.17	400 200	7,2 19 - 21	1050	0
29	1050 1155	ca.11,0 ca. 4,7	with				400 550	6,9-7,5 3,2-5,1	800	0,6-0,8
	1280	0,3-1,0	aux	iary	Shuin]	780	0 - 1	500	0,8-1,0

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	uli-load stop emp. 40°C (104°F)	Rotational- speed limitat		uel delivery haracteristics	Starting I	fuel delivery 5	4a id	le stop
rev/min	cm³/1000 strokes 2	changed to .) rev/min 3	rev/min 4	cm ⁹ /1000 strokes 5	rev/min	cm#1000 strokes	rev/min	Control rod travel mm
LDA 1050	0,9 bar 142,0-144,0 (140,0-146,0)	1085-1095*	LDA 750 LDA	0,9 bar 156,0-160,0 (154,0-162,0) 0 bar	400 1155	21,0-27,0 (19,0-29,0) 24.0-44.0 (22,0-46,0)		<u>, </u>
			500	108,0-116,0 (106,0-118,0)		1,0 40,0,		

Checking values in brackets

* 1 mm less control rod travel than col 2

1.77

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EP/RSV .. P2/412D

	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min	Intermediate rated speed 4 5 6			Control- lever deflection in degrees	tion rev/min mm			rque control Control rod travel mm
ca.38	1040 1080 1120 1050 1100 1280	16,0 11,2 5,2 ca.10,6 ca. 4,7 0,3-1,0	aux with	hout iliary			400 200 400 550 780	7,2 19 - 21 6,9-7,5 3,3-5,1 0 - 1	1050 800 500	0 0,6-0,8 0,8-1,0

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat.		uel delivery naracteristics	Starting I	fuel delivery 5	Idle stop	
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	travel mm 9
LDA 1050	1,0 bar 151,0-153,0	1085-1095*	LDA 750	1,0 bar 163,0-167,0 (161.0-169,0)	400	21,0-27,0		
			LDA	0 bar	1155	24,0-44,0 (22,0-46,0)		
			500	108,0-116,0 (106,0-118,0)				

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

EP/RSV .. P7/413D

1 Uppe	er rated speed	l rev/min	Interme	ediate rate	d speed	4	Lowe	er rated speed	(3) To	rque control
Degree of deflection of control lever	Control red travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min 8	Control rod travel mm	rev/min	Control rod travel mm
ca.66	1040 1080 1110	16,0 9,0 3,2	with auxi		spring	ca.28	400 150 400	7,0 19 - 21 6,7-7,3	1040	0
29	1110	ca.13,2 ca. 5,2 0,3-1,0	with auxi		spring		500 660	3,2-5,9 0 - 1	500	0,7-0,9

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ill-load stop	6 Rotational- speed limitat.		iel d elive ry aracteristics	Starting 1	fuel delivery 5	(4) Idi	e stop
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm³/1000 strokes 7	rev/min 8	Control rod travel mm 9
1050	151,0-153,0	1065-1075*	750	163,0-167,0	400 1115	21,0-27,0 4,5-5,5mm	RW	•

Checking values in brackets En

* 1 mm less control rod travel than col. 2

Ppe 1010

-3-

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
1010 + 411D	0,55	0,20	0,1 - 0,3 mm 1,8 - 2,0 mm
1010 + 412D	0,63	0,20	0,1 - 0,3 mm 2,2 - 2,4 mm
hydraulic	Locking at	Unlocking at	
1010 + 411D 1010 + 412D	max. 0,76 max. 0,76	min. 0,45 min. 0,48	

Notes:

(1) when n =

750 rev/min and gauge pressure = 1,0

bar (= maximum full-load control rod travel)

Preliminary adjustment, dimension H - 411D = 32.8 mm- 412D = 33.3 mm

Testoil-ISO 41

Test Specifications Fuel Injection Pumps ① and Governors

Wpp 001/4 VOL 7.0 e 5. Edition

PE 6 P 110 A 320 RS 367

RQV 250-1200 PA394/2R (1)

supersedes 4.79

RS 367Z

PA394/2R (2)

Volvo company: TD 70 F

RS 367Y

PA394/2R (3)

engine: ID / 1-174kW-237PS) (2-155kW-210PS)

(3-180kW-245PS)

All test specifications are valid for Boach Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 3,00-3,10 Port closing at prestroke (2,95-3,15) mm

mm (from BDC)

Total Colonial at pro-		(2,95-3,15)	111111 (11-011-00)					
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Cifference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-contral valve) mm 6		
700	11,9	12,1 - 12,3	0,4(0,8)	10,9	10,0 - 10,2	2,5± 0,1**		
	+ 0,1			+0,1		(max.2,2-2,9)		
250	4,7-4,8	0,9 - 1,3	0,4(0,6)	4,7-4,8	0,9 - 1,3			
700		C, 4-5	0,6(1,0)					

Adjust the fuel delivery from each outlet according to the values in In the case of greater dispersion alter the delivery-valve spring pre-tension

accordingly.

5, 551	41101	SALTHI	40								(1)	
Upper rated t	speed			Intermediate rated speed				Lower rated	speed	Clidian	Sliding sleeve travel	
Degree of deflection of control	rev/min Control rod travel	Control rod travel		Degree of deflection of control		Control rod travel		Degree of deflection of control		Control rod travel	Siloning	1
lever	mm	rev/min		lever	rev/min	mm (4)	lever	rev/min	mm (3) rev/min	mm
1	2	3		4	5	6	_	7	8	9	10	11
ca.68	1200 1500	15,2-17, 0 - 1	,8					ca.12	100 250	min.6,3 4,7-4,9	200	0,3-1,2
									420-4	70=2,0	1230	8,2
ca.68	10,9 4,0	1260-127 1370-140						3 a)	600	0-1		-

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load of Control-ro Test oil ter		Rotational-speed 20 limitation intermediate speed	Fuel deli- high idle s	rery characteristics (5a)	Starting Idle switchin		Torque- travei	control 5
rev/min 1	cm³/1000 strokes	rev/min 4a	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm ³ /1000 strokes 7	rev/min 8	travel men
(1) 700	LDA 0,7 bar 121,0-123,0 (118,0-126,0)	1260-1270*	LDA 700	0 bar 78,5-80,5 (75,5-83,5) di	100 250 spers	165 - 200 11-15 ion.max.3 ^{)**}		

Chucking values in brackets

*1 mm less control rad travel than cel. 2 4.80

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. C by Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany. Imprime en République Féderale d'Allemagne par Robert Bosch GmbH.

B. Governor Settings

rodtravel mm

mm

1200

1450

9,9

4,0

rev/min | Control rod Control | travel

rev/min

15,2-17,8

0 - 1

1265-1275

1360-1385

367Z (2)

		36/2 (2	()		VOL	7,0 6	-2	<u>'</u> -
e	ed	Lower rated	speed			Sliding st	eeve travei	l
	Control rod travel	Degree of deflection		Control ro travel	d	onemy s	①	
	mm 4	of control lever	rev/min	mm	3	rev/min	mm	
	6	7	88	9		10	11	ı
	-	ca.12	100 250	min.6 4,7-4	,5 ,8	200	0,3-1,2	
	1			,	•	1230	8,2	

0 - 1

600

Torque control travel a =

Upper rated speed

Degree of deflection

of control

ca.68

ca.67

C. Settings for Fuel Injection Pump with Fitted Governor

Intermediate rated speed

rev/min

Degree of deflection

of control

Full-load de Control-roe Test oil ten		Rotational-speed (25) limitation intermediate speed	Fuel delin high idle :	rery characteristics 58 speed 50	Starting Idle switchir		Torque- travel	Control cod
rev/min	cm ³ /1000 strokes	rev/min 48	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm3/1000 strokes	rev/min 8	travel mm
700	LDA 0,6 bar 100,0-102,0 (97,0-105,0)	1265-1275*	LDA 700	0 bar 78,5-80,5 (75,5-83,5)	100 250 disp	165-200 11- 15 ersion max.3)**	

Check alues in brackets * 1 mm less control rod travel than col. 2

B. Governor Settings

367Y (3)

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Slidion sl	eeve travel
		110101	1a)	Degree of deflection	1	Control rod travel	Degree of deflection	1	Control rod travel		1
of control lever	rod travel mm	rev/min (29	of control lever	rev/min	mm 4	of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.68	1200 1450	15,2-17 0 - 1	,8				ca.12	100 250	min.6,3 4,7-4,8		
ca.68	11,3 4,0	1240-12! 1322-13					3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem rev/min		Rotational-speed (2b) limitation intermediate speed rev/min 3	Fuel delives high idle s rev/min 4	rery characteristics 5a speed 5b cm ³ /1000 strokes 5	switchii	fuel delivery 6 ng point cm ⁴ /1000 strokes 7	Torque- travel rev/min 8	Control rod travel mm
LDA 700	0,7 129,0-131,0 (126,0-134,0		LDA 700	0 bar 78,5-80,5 (75,5-83,5)	100 250 disp	165,0-200,0 11-15** ersion max.3		

Checking values in brackets

* 1 mm less control rod travel than col. 2

VOL 7,0e

-2-

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
367 _ 394/2R	0,48	0,27	11,5 - 11,6 10,3 - 10,5
367 _ 394/2R	0,37	0,24	10,6 - 10,7 9,9 - 10,1
367 _ 394/2R	0,53	0,26	11,8 - 11,9 10,3 - 10,5

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

estoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4

3. Edition

PE6P110A720RS 368

RS 380

RQV 250-1050 PA 240 R (1) 250-1100 PA 434 R (2)

250-1100 PA 503

supersedes

6.79

company: engine:

Chrysler BSS36

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

2,80-2,90

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Sprin() pre-tensioning (torque-control valve) mm 6
1050	14,5-14,5	16,6-16,8	0,4(0,8)	15,5-15,6	18,6-18,8	n = 1100
250 1050/1100	8,7 - 8,9	2,2- 2,8 C, 4-5	0,4(0,7) 0,6(1,0)	8,5-8,7	2,2- 2,8	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

240 R (1)

Upper rated s	peed		Intermediate	rated sp	eed	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control rod travel mm	Control rod travel mm rev/min 2a	Degree of deffection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm 11
1	2	3	-	-	10	<u> </u>	<u> </u>	•	10.	
ca.68	1050 1400	15,2-17,8 0 - 1	-	-	-	ca.13	100 250 490-	min.10,3 8,7-8,9 555= 2,0		1,1 4,0-4,2 7,6
ca.62	13,5 4,0	1090-1100 1230-1260				350-500 3	700	0 - 1		

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) _ 2		Rotational-speed 20 limitation intermediate speed	very characteristics (5a) poed (5b)	Starting Idle switchir	•	Torque- travel	e-control 5 Control rod	
rev/min	cm³/1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
1	2	3	4	5	8	7	8	9
LDA 1050	0,7 bar 166,0-168,0 (163,0-171,0)	1090-1100*	LDA 1050	0 bar 127,0-131,0 (124,0-134,0		19,5-21,0		
						•		٠/٠

Checking values in brackets

* 1 mm isse control rad travel then agi. 2

 \odot

B. Governor Settings

Upper rated s	peed		Intermediate	rated spe	ed	Lower rated	speed		Sliding sl	eeve travel
deflection	rev/min Control rod travel mm	Control rod travel mm rev/min 28		rev/min	travel	Degree of deflection of control lever 7	rev/min 8	Control rod travel mm 3	rev/min	1) mm 11
ca.68	1400	15,2-17,8 0 - 1 1140-1150 1290-1320		-	-	ca.18	100 250 470- 750 340-	min.10,1 8,5-8,7 530= 2,0 0 - 1 460		1,6-1,8 5,4-5,6 8,2
	',					(3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	istop p. 40°C (104°F) 2	Rotational-speed (2b) limitation intermediate speed rev/min	character high idle s	isucs	idle switchin	 Torque-c travel	1
LDA 1100	0,9 bar 186,0-188,0 (183,0-191,0)	1140-1150*	LDA 1100	0 bar 134,0-138,0 (131,0-141,0		0	9

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
·	Gauge pressure = bar	Gauge pressure = bar	mm
368 - 240 R	. 0,68	0,50 0,36 0	14,5 - 14,6 14,0 - 14,1 12,9 - 13,2 12,6 - 12,7
380 - 434 R	0,90	0,68 0,48 0	15,5 - 15,6 15,0 - 15,1 13,7 - 13,9 13,2 - 13,3

1.80

^{* 1} mm less control rod travel than col 2

B. Gov	ernor	Setting	gs											503
Upper rated				Intermediate	rated spe	ed		Lower rated	speed	1		Sliding sl	eeve tr	ave!
Degree of	rev/min	Control rod	(1a)	Degree of deflection		Control ro	d	Degree of deflection		Control ro			(①
deflection of control lever	rod travel		(2a)	of control lever	rev/min	mm	(4)	of control lever	rev/mın	mm	(3)	rev/min	mm	
1	2	3		4	5	6	$\overline{}$	7	8	9		10	11	
ca.68	1180 1400	15,2-17 0 - 1	,8	-	•	-		ca.18	100 250					
ca.65	14,5	1140-11	50						500	-560 =	2,0			
	4,0	1280-13	20					(3a)	340	-460				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/1000 strokes rev/min 3 rev/min cm³/1000 strokes rev/min 6 7 rev/min 8 9 LDA 0,9 bar 1100 186,0-188,0 (183,0-191,0) 1140-1150 (131,0-141,0) (80)	Full-load of Control-ro Test oil te		Rotational-speed 2b fimitation intermediate speed	Fuel deliv character high idle s	ristics	Starting Idle switchin	fuel delivery 6°	Torque- travel	Control cod
LDA 0,9 bar 1100 186,0-188,0 1140-1150 1100 134,0-138,0 100 (80)	rev/min	cm ³ /1000 strokes	rev/man (48)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes		
1100 186,0-188,0 1140-1150 1100 134,0-138,0 100 (80)	1	2	3	4	5	0	[8	3
		186,0-188,0	1		134,0-138,0	L	(80)		

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/កោរា decreasing pressure – in bar gauge pressure

Pump/governor	Setting		Measurement		dim:nution Control rod travel- difference
	Gauge pressure =	bar	Gauge pressure	bar	mm
380 - 503	0,90				15,5 - 15,6
	,		0,68	Ì	15,0 - 15,1
			0,475		13,5 - 13,7
			0		12,9 - 13,0
			<u> </u>		1 00

1.80

^{* 1} mm less control rod travel than col. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

VDT-WPP 001/4 SCA 11,0n

3. Edition

engine:

PE 6 P 110 A 720 RS 3005 RS 3007

RQV 250-1100 PA 183 R RQV 250-1100 PA 229R EP/RSV 350-1100 P1/310 R

11.74 supersedes Scania company: D 11

Z..1 See page 3!

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

RS 3005

+0,15

Port closing at prestroke

3,3 + 0,1

-0.05

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	12,4 - 13,0				2,5±0,1**
600	9 12	5,8 - 6,8 11,9 - 13,2				(max.2,2-2,9)
200	15 9	17,1 - 18,6 3,4 - 4,3				

Adjust the fuel delivery from each outlet according to the values in

In the case of greater dispersion alter the delivery-valve spring pre-t

B. Governor Settings

RQV ... 183

Upper rated s	per rated speed			Intermediate	rated sp	ed	Lower rated	speed		Sliding e	eeve travel
deflection	rev/min Control rod travel	travel '	•	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	onan g	0
lever	M M	rev/min (29		rev/min	mm 4	lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.66	1120 1200 1300 1470	15,0-17 9,2-13 1,0- 7	,6	-	-	-		150 250 400 500	6,5-8,0 3,6-6,1 1,1-2,4 0	1200	8,3
							3a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics 5a peed 50	Starting Idle switchis	<u> </u>	Torque- travei	Control Control rod
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travei mm
1	2	3	4	5	6	7	8	9
1100	135,0-137,0	1135-1145*	600	132,0-136,0	100	190 - 240		
			1200 disper		225 isper	12 - 16)** ion max.2)**		
(incr	ease by 2,0 c	m³)						./.

Checking values in brackets

* 1 mm less control rod travel then col. 2

5.75

Upper rated	speed			Intermediate	rated spe	ed	Lower rated	speed			
Degree of deflection of control lever	rev/min Control rodtravel mm	Control rod travel mm rev/min	(a) (2a)	Degree of deflection of control fever	rev/min	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	Sliding sl rev/min 10	mm
ca.66	1120 1200 1300 1410	15,0-17 9,2-13 1,0- 7	,6	-	-	_	ca.10	150 250 400 500	6,5-8,0 3,6-6,1 1,1-2,4 0	1120	8,3

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roo Test oil ten		Rotational-speed (2b) limitation intermediate speed	Fuel dela high idle s	very characteristics (5a) speed (5b)	Starting Idle switchir	\sim	Torque- travel	Control roo
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1100	135,0-137,0	1135-1145*	600	132,0-136,0	100	190 - 240		
i			1200 dispe		225 isper	8 - 12 _{)**} sion max.2		
		;			`			

ang values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

EP/RSV 350-1100 P1/310 - 3005

Upper rated :	speed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm	mm	1a) 2a)	Degree of deflection of control lever		Control rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	(1)
1	2	rev/min (اك	4	5	mm (4) 6	7	8	9	10	11
ca.67	1100 1150 1200 1150 1200 1350	16,0 11,7 6,0 10,4-12 4,4- 7 0,3- 1	,8	withou auxili with auxili	ary sp	ring ring	ca.31	350 100 350 400 500	6,0 19 - 21 5,7-6,3 3,2-4,7 0 - 1	1080	0

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem		Rotational-speed (2b) imitation intermediate speed	Fuel delin high idle s	rery characteristics 5a speed 5b	Starting Idle switching		Torque- travei	Control roo
rev/min	cm ³ /1000 strokes	rev/min (4a)	rev/min	cm ³ /1000 strokes	rev/min	cm ⁴ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1100	135,0-137,0	1135-1145*	600	132,0-136,0 dis		190 - 240 8 - 12** pn max. 2** 38,0-48,0		
		<u> </u>						•/•

Checking values in brackets

* 1 mm less control rod travel than col 2

Output Index	variat %	ion n = U/min	$Q = cm^2/1000$	n = U/min	$Q = cm^3/1000$	Adjustment of control-rod position from 100% setting mm
T	103	1100	138 ± 1,0	600	136 ± 2,0	+ 0,2
X	95	1100	126	600	124	- 0,5
Q	93	1100	122	600	120	- 0,7
Z	90	1100	117	600	113	- 1,0
0	88	1100	114	600	108	- 1,2
N	85	1100	111	600	104	- 1,4
M	80	1100	106	600	96	- 1,7
L	7 5	1100	99	600	86	- 2,1
K	70	1100	94	600	76	- 2,5
J	65	1100	89	600	68	- 2,8
I	60	1100	83	600	59	- 3,3

Testoil-130 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FBW 11,9 b 1. Edition

PE 6 P 120 A 721 RS 439

RQV 250-1025 PA 608

FBW company:

engine:

E 5 A/EU 5 A 206 kW (280 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection, Pump Settings

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3		Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	10,8+0,1	19,6 - 20),0	0,5(0,8)			
250	7,4-7,5	3,5 - 4	,1	0,8(1,2)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	Intermediate rated speed				Lower rated speed			
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 3	(a) (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4		Degree of deflection of control lever	rev/min 8	Control rod travel mm 3	rev/min	mm	
max.	1060	15,2-17	,8	-		-		ca.13	100 250	min.8,5 7,4-7,5		0,7-0,9 2,6-2,9	
ca.46		1065-107 1110-114 0 - 1	10							60= 2,0mm	750	4,6-4,8 8,0	
						L	ļ	<u>(3a)</u>					

Torque control travel a = U , 4

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-roc Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel delivention idle s	rery characteristics 5a	Starting Idle switchin		Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 48)	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
LDA 1000	0,7 bar 196,0-200,0 (193,0-203,0)	1065-1075*	LDA 600	0,7 bar 174,0-180,0 (172,0-182,0)	100	150,0-170,0	500 900	10,8+0,1 11,4+0,3 10,8+0,3
			LDA 600	0 bar 126,0-130,0 (123,0-133,0)			700	11,2+0,2

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

FBW 11,9 b

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE6PRS 439 PA 608	0,7	0 0,5 0,4	11,5 - 11,6 9,4 - 9,5 10,9 - 11,1 10,2 - 10,5

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps ① and Governors

2. Edition

PE 6 P 120 A 320 RS 3074 RQV 250-1100 PA 564

supersedes

6.81

company:

Volvo

engine:

TD 120 F 283 kW(385 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(2.35-2.55)

mm (from BDC)

		(-,00 -,00/				
Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,6+0,1	24,1-24,4	0,5(0,9)		·	$(2,5 \pm 0,1)$
250	4,3-4,5	2,3- 2,7	0,5(0,8)			(max.2,5-2,9) **

Adjust the file class of greater dispersion after the delivery-valve spring pre-tension accordingly.

B. Governor Settings

Upper rated	speed			Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
Degree of deflection of control lever	rev/min Control rod travel	Control rod travel mm rev/min	(1a) (2a)	Degree of deflection of control lever	rev/min	Control rod travel	Degree of deflection of control lever	manufania.	Control rod travel		
1	2	3	<u> </u>			mm (4)	7	rev/min 8	mm (3)	rev/min 10	mm 11
max.	1100	15,2-17,	8	-	-	-	ca.11	100	min.6,0	200	1,1-1,4
ca.62		1140-115 1235-126 0 - 1,0	5	:			260-355	250	4,3-4,5	500 800 100	3,3-3,5 5,1-5,3 8,1
							3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Rotational-speed 20 limitation intermediate speed	Fuel deliv	rery characteristics 5e	Starting Idle switchir	• •	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 44	f s v/min	cm ³ /1000 strokes	rev/min	cm³//000 strokes	rev/min	travel mm
LDA 700	1,2 bar 241,044,0 (238,0-247,0)	1140-1150*	LDA	0 bar 148,0-152,0 (145,0-155,0)	100	288,0-308,0 /16,5-17,5 mm RW	•	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

11.91

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung.
C by Robert Bosch GmbH, D-7 Stuttgart 1, Postfach 50. Printed in the Federal Republic of Germany.
Imprime en Republique Federale d'Allemagne par Robert Bosch GmbH.

-2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

VOL 12,0 h

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
PE 6 PRS 3074 PA 564	1,2	0 0,67 0,23	13,6 - 13,7 9,8 - 9,9 12,5 - 12,7 10,7 - 10,8

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 411

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 4. Edition

PE 6P 110 A 720 RS 368 RQV 250-1050 PA 240R

1 - 5 - 3 - 6 - 2 - 4 je 60°

supersedes

1.80

company:

Chrysler

engine:

BS 36 202kW (275PS)

All test specifications are valid for Bosch Fuel injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings
(2,75-2,95)
Port closing at prestroke
(2,80-2,90)
mm

mm (from BDC)

Rotational speed rev/min 1	Control rod travel smm 2.	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1050	14,5-14,6	16,6-16,8	0,4(0,8)			
250	8,7-8,9	2,2- 2,8	0,4(0,7)			
1050	-	C,Sp. 4-5	0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	Peed	Intermediate rated speed			Lower rated	speed	4	Sliding sleeve traval		
deflection	rev/min Control	travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		, ①
of control lever	rod travel mm	rev/min (2	of control lever	rev/min	mm (4)	of control lever	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
ca .68	1050	15,2-17,8	-	-	-	ca.13	190	min.10,3	250	1,1
	1400	0-1					250	8,7-8,9	600	4,0-4,2
ca.62		1090-1100 1230-1260	-			350-500 ③	495-5 700	55 = 2,0 0 - 1	1080	7,6

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten	elivery d stop np. 40°C (104°F) 2	Rotational-speed 2b timitation intermediate speed	Fuel delin	rery characteristics 5a	Starting idle switchin	fual delivery 6	Torque- travel	Control (5
rev/min	cm ³ /1000 strokes .	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA	0,7 bar		LDA	0 bar				
1050	166,0-168,0 (163,0-171,0)		1050	127,0-131,0 (124,0-134,0	100	19,5-21,0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
368 - 240R	0,68		14,5 - 14,6
		0,50	14,0 - 14,1
		0,36	12,9 - 13,2
		0	12,6 - 12,7

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

estoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 MB 11,8 1 3. Edition

PE 6 P 110 A 720 RS 371

RQV 300-1100 PA 455 R

supersedes

8.81

1 - 5 - 3 - 6 - 2 - 4

 $0 -60-120-180-240-300^{\circ} \pm 0,5 (\pm 0,75^{\circ})$

company:

Daimler-Benz OM 355 A

engine:

206 kW(280 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2 80-2 90

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Cifference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	11,7	16,0-16,2	0,4(0,8)			
300 600 500	+0,1 5,9-6,1 11,7+0,1 11,0+0,1	1,1 - 1,7 C,Sp. 4 - 5 C,Sp. 4 - 5	0,4(0,7) 0,6(1,0) 0,6(1,0)		τ	

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	eed ·	Lower rated	speed		Sliding s	leeve travel
deflection	rev/min Control rod travel mm 2	Control rod travel mm rev/min 28	of control	rev/min	Centrol rod travel	Degree of deflection of control lever	rev/min	Control rod travel	rev/min	mm ①
	<u> </u>	3	 -	5	6	 	8	9	10	11
max.	1100	15,2-17,8				ca.17	100 300	min.7,7 6,1-6,3	550	0,9-2,0 4,1-4,5 5,5-5,9
ca.66	10,7 4,0 1350					3a	430-	500 =2,0		8,2

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed (2b) limitation intermediate speed		Fuel delivery characteristics 5a Starting fuel delivery high idle speed 5b Idle switching point		• 0	Torque- travei	control 5
rev/min	cm³/1000 strokes .	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm²/1000 strokes	rev/min 8	travei mm 9
LDA 1100	0,7 bar 160,0-162,0 (157,0-165,0)	1140-1150*	LDA 600 LDA 500	0,7 bar 155,0-159,0 (152,0-162,0) 0 bar 132,0-136,0 (131,0-139,0)		140,0-160,0		

Checking values in brackets

* 1 mm less control rod travel than col. 2

2.82



MB 11,8 1

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure in segation XX

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1) .
371 - 455 R	0,7 bar		11,7 - 11,8
		0,39	11,5 - 11,6
·		0,35	11,2 - 11,3
		0	11,0 - 11,1
	<u></u>		

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

①

estoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 RVI 8,8 e 1. Edition

En.

PES 6 P 120 A 320 RS 406

RQV 250-1100 PA 495

supersedes

company: RVI

engine:

MIDS 062030

188 kW (256 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8-2,9 (2,75-2,95)

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1100	9,9+0,1	19,0-19,4	0,5(0,8)			
250	4,0-4,2	1,7- 2,3	0,8(0,7)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed		Intermediate	rated sp	aed	Lower rated	speed		Stiding	iceva travel
Degree of deflection of control	Control	Control rod travel	Degree of deflection of control		Control rod travel	Degree of deflection		Control rod travel	Silding a	0
lever	rod travel	rev/min 2a	lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1100 1350	15,2-17,8 0 - 1,0				ca.10	100 250	min.5,6 4,0-4,2	500	0,7-1,0 3,4-3,6 4,8-4,9
ca.66	8,9 4,0	1140-1150 1180-1210							100	6,8
						3a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		limitation intermediate spear.	(3)		Starting Idle switchin	• •	Torque- travei	control 5
rev/min	cm³/1000 strokes .	rev/min	∉ ;: 3≈/min }	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
LDA 1100	0,7 bar 190,0-194,0 (187,0-197,0)	1140-11:50*	LDA	0 bar 141,0-145,0 (138,0-148,0			.8	

Checking values in brackets

* 1 mm less control rod travel than col. 2

BOSCH

Geschäftsbereich KH. Kundendienst. Kfz-Ausrüstung. C by Robert Bosch GmbH. D-7 Stuttgart 1, Postfach 50 Printed in the Federal Republic of Germany Imprime en République Federale d'Allemagne par Robert Bosch GmbH.

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

RVI 8,8e

-2-

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure =	bar Gauge pressure =	bar mm (1) .
RS 406 -	0,7		9,9 - 10,0
PA 495		0,33	9,4 - 9,5
		0,27	8,3 - 8,4
		0	8,0 - 8,1

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

WPP 001/4 VOL 12,0 e 1. Edition

En

PE 6 P 120 A 320 RS3048 PE 6 P 120 A 320 RS3046 RQV 250-1100 PA414/2R (1) EP/RSV 200-900 P 4/421R (2) supersedes

company:

engine:

Volvo T(M)D 120 C

Testing with T nozzles and fuel lines 8x2x1000

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,60-2,70 mm (from BDC (2,55-2,75)

Rotational speed		(2,55-2,75) Fuel delivery cm³/100 strokes	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ³ /100 strokes	Spring pre-tensioning (torque-control valve)
700	12,3	21,8-22,1	0,4(0,8)	12,7	21,7 - 21,9	2,5 ± 0,1** (max.2,2-2,9)
250 700	5,8-5,9 	1,6 - 2,0 C, 4-5	0,4(0,7)		0,9 - 1,3	0,3(0,6)

Adjust the fuel delivery from each outlet according to the values in

In the case of greater dispersion after the delivery-valve spring pre-tensic

B. Governor Settings

Upper rated :	peed	,		intermediate	rated ap	eed	Lower rated	speed		Sliding	leeve tr ave l
Degree of deflection of control		Control rod travel	(9)	Degree of deflection of control		Control rod travel	Degree of deflection of control		Control rod travel	Cilcumg C	0
lever		rev/min	20	lever	rev/min	mm (4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.50	1100 1350	15,2-17, 0 - 1	8	-	-	-	ca.12	100 250	min.8,5 5,8-5,9	250 800	0,5-1,2 4,6-5,0
ca.48		1140-115 1235-126					3 a)	330-3	90 = 2,0	1170	8,3

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/	³ /1000 strokes .	rev/min 4	rev/min	cm³/1000 strokes	rev/min	cm ³ /1000 strokes		travel
1 1			4	5	6	_	rev/min 8_	mm 9
700 218	OA 1,1 bar 18,5-220,5 215,5-223,5)	1140-1150*	LDA 700	0 bar 148,0-152,0 (145,0-155,0 dis	250	205,0-245,0 16-20** pn.max.4(7)		•/•

Chucking values in brackets

* 1 mm less control rod travel then col. 2

7.78

BOSCH

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interme	diate rated	speed 6	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
loose	800	0,3-1,7	ALF J			ca.23	250	5,3	900	0
ca.55	995-1	5,0 60 =11,7 025= 4,0 0,3-1,7					100 250 315- 450	min.19 5,8-5,9 375=2,0 0 - 1	250	1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	水-load stop	6 Rotational- speed limitat.		uel delivery naracteristics	Starting f	uel delivery 5	49 Idl	e stop
Test foil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ⁹ /1000 strokes 7	rev/min 8	Control rod travel mm
(2) 700	217,0-219,0 (214,0-222,0)	940-950*			250	395,0-435,0 9 - 13** ion max.3(6)	

Checking values in brackets

* 1 mm less control rod travel than col. 2

J. Adjustment Test for Manifold Pressure Compensator

Test at n =

Testoil-ISO 4113

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
3048 - 414/2R	0,61		11,8 - 11,9
		0,20	9,6 - 9,8
	·	·	

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

En

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 VOL 10,0 g 1 1. Edition

PE 6 P 110 A 320 RS 229

ROV 250-1100 PA 236/2R

supersedes

company:

engine:

Vol vo THD 100 D

154,5 kW(210PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,6-2,7

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	9,7-9,8	12,1 - 12,3	0,4(0,8)			
250	5,2-5,4	0,9 - 1,3	0,3(0,7)			

Adjust the fuel delivery from each outlet according to the values in [

B. Governor Settings

Upper rated s	peed	1	Intermediate	rated sp	eed	Lower rated	speed		Sliding	leeve travel
	rev/min Control	Control rod (1a)	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		. ①
of control lever	rod travel mm	mm rev/min (28)	of control	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6	7	8	9	10	11
max.	1150	15,2-17,8	-	-	_	ca.11	100	min.6,8	200	0,6-1,0
ca.44	0 7	4440 4450					250	5,2-5,4	500	2,9-3,2
Ca.44	8,7 4,0	1140-1150 1190-1220	ļ				305-3	365=2,0mm	800	5,0-5,3
}	1350	0 - 1,0					1		1100	7,7
						3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp. 40°C (104°F) 2		Rotational-speed 20 limitation intermediate speed	Fuel delivery characteristics 5a high idle speed 5b		Starting Idle switching		Torque-control 5 travel Control ro	
rev/min	cm³/1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm³/1000 strokes	rev/min	travel mm
LDA 700	0,4 bar 121,0-123,0 (118,0-126,0)	1140-1150*	LDA 700	0 bar 112,5-115,5 (109,5-118,5)	100	320,0-360,0 bei 19,5-21,0 mm RW	-	-

Checking values in brackets

* 1 mm less control rod travel than col. 2

Test at n =

rev/min decreasing pressure - in bar gauge pressure

VOL 10,0 q 1

-2-

Pump/governor Setting Gauge pressure = bar Gauge pressure = bar Gauge pressure = bar mm (1) PE6P RS 229PA236/2R O,4 O,17 Gauge pressure = bar Gauge pressure = bar mm (1) 9,7 - 9,8 9,2 - 9,3 9,4 - 9,5				VUL TU O G 1
PE6P RS 229 0,4 9,7 - 9,8 9,2 - 9,3 0,17 9,4 - 9,5	Pump/governor	Setting	Measurement	Control rod travel-
PA235/2R 0 9,2 - 9,3 9,4 - 9,5		Gauge pressure = bar	Gauge pressure = bar	mm (1) ,
		0,4	0,17	9,2 - 9,3 9,4 - 9,5

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001/4 FIA 13,8 g

3. Edition

PE 8 P 120 A 920/5 LS 3804

RQV 300-1200 PA 506

supersedes

2.81 Fiat

1 - 8 - 4 - 3 - 6 - 5 - 7 - 2 je $45^{\circ} \pm 0.5^{\circ}$ (± 0.75)

company: engine:

331 kW(450 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke mm (from BDC)

	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery cm ² /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1200	11,6+0,1	24,3 - 24,7	0,5(0,9)			
300	4,9-5,1	1,9 - 2,5	0,8(1,2)	·		

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated speed			Intermediate rated speed			Lower rated speed			Stiding sleeve travel	
Degree of deflection of control lever	rev/min Control rod travel mm 2	Control rod travel mm rev/min 2a	Degree of deflection of control lever	r e v/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	1
max.	1280	15,2-17,8	-	-	-	ca.10 310-405	100 300	min.6,5 4,9-5,1	250 560	0,6-0,9 3,8-4,3
ca.59	10,6 4,0 1500	1240-1250 1360-1390 0 - 1,0				310-403	300	4,5-5,1	880 1200	5,5-5,7 7,8

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Fuiti-load delivery Control-rod stop Test oil temp: 40°C (104°F) 2		Rotational-speed 20 limitation intermediate speed	Fuel delivery characteristics 5e high idle speed 5b		Starting idle switchin	$\mathbf{O}_{\mathbf{I}}$	Torque-control 5 travel	
rev/min 1	em³/1000 strokes	rev/min 4a)	rev/min 4	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes	rev/min 8	travei mm 9
LDA 1200	0,7 bar 243,0-247,0 (240,0-250,0		LDA 1200	0 bar 160,0-164,0 (157,0-167,0		210,0-240,0	-	•

Checking values in brackets

* 1 mm less control rod travel than col. 2

2.82

-2-

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

FIA 13,8 g

Pump/governor	Setting		Measurement	diminution Control rod travet- difference
	Gauge pressure =	bar	Gauge pressure = bar	mm (1) .
PE8PLS3804	0,70			11,6 - 11,7
PA506			0	8,5 - 8,6
			0,44	10,8 - 10,9
			0,35	9,2 - 9,5

Notes:

(1) when n =

rev/min and gauge pressure = bar (= maximum full-load control rod travel)

Testoil-ISO 4113

Test Specifications Fuel Injection Pumps 1 and Governors

WPP 001(4 SCA 11,0 u 1 1. Edition

PE 6 P 120 A 720 RS 7001

RQV 250-1050 PA 539

supersedes

company:

Saab-Scania

engine:

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings 5,00-5,10 Port closing at prestroke (4,95-5,15) mm

mm (from:BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12,3+0,1	23,8 - 24,2	0,5(0,9)			
250	3,9-4,1	1,6 - 2,0	0,5(0,8)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

deflection	rev/min Control	n was	9	Intermediate Degree of deflection	rated sp	Control ro	Lower rated speed Degree of deflection		speed	Control rod	Sliding sleeve trave	
of control lever	rod travel mm 2	mm rev/min (3	_ \ \	of control lever 4	rev/min 5	mm 6	•	of control lever 7	rev/min 8	mm 3 9	rev/min 10	mm 11
ca.68	1050 1350	15,2-17,8 0 - 1,0	3	-	•	-		ca.9	250 100	4,0 min.6,1	200 500	1,0-1,2 3,8-4,3
ca.59		1090-1100 1210-1240							250	3,9-4,1 70= 2,0mm	800 1050	5,6-5,8 7,6-7,7
								3 a				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		limitation intermediate speed	. I		Starting Idle switchir	•)	Torque- travel	control 5
rev/min	cm³/1000 strokes	rev/min 4	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
LDA 1000	0,7 bar 238,0-242,0 (235,0-245,0)		LDA 600 LDA 500	0,7 bar 199,0-205,0 (196,0-208,0 0 bar 161,0-165,0 (158,0-168,0))	23,0-28,0 bei 20,0-21,0 mm RW	8	9

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure

SCA 11,0 u 1

AAAAAAA		
Setting	Measurement	diminution Control rod travet- difference
Gauge pressure = bar	Gauge pressure = bar	mm (1) .
0,7 bar		12,3 - 12,4
	0,45	12,0 - 12,1
	0,37	11,6 - 11,8
	0	11,4 - 11,5
	,	
	Setting	Setting Measurement Gauge pressure = bar 0,7 bar 0,45 0,37

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

estoil-ISO 41

Test Specifications Fuel Injection Pumps 1 and Governors

PES 6 P 120 A 420 RS 3049 RQV 250-1000 PA 505

WPP 001/4 SAU 12,0c

1. Edition

supersedes

company:

Sauer

engine:

D4KT

1 - 4 - 2 - 6 - 3 - 5 je 60°

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings (3,15-3,35) (3,20-3,30) mm

mm (from BDC)

		3.20-3.30				
Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	11,3-11,4	24,5 - 24,9	0,5(0,8)			
250	5,3-5,5	2,8 - 3,6	0,8(1,2)			7
700/400		C, Sp. 4-5	0,6(1,0)	<u> </u> 		
						` '
	<u> </u>	<u></u>		I	<u> </u>	

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated	speed			Intermediate	rated ap	eed	Lower rated	speed		Stiding	leeve trave.
Degree of deflection of control laver	rev/min Control rod travel mm 2	Qontrol rod travel mm rev/min 3	(a) (2a)	Degree of deflection of control lever	rev/min 5	Control rod travel mm 4	Degree of deflection of control lever	rev/min	Control rod travel mm (3		1
ca.68	1000 1250	15,2-17 0 - 1	,8	-	-	-	ca.14		min.7,0 5,3-5,5	250 350 1050	1,3 2,6-2,8 8,6
ca.68	10,3 4,0	1040-105 1110-114					39	430-4	180= 2,0		. ,,,

Torque controi travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	very characteristics (58 peed (50)	Starting Idle switchin		Torque- travel	control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm +0,1
LDA 1000	1,2 bar 245,0-249,0 (242,0-252,0)	1040-1050*	LDA 700 LDA 400	1,2 bar 216,0-220,0 (213,0-223,0) 0 bar 94,0- 98,0 (91,0-101,0)		225,0-235,0 70 (80-190)	1000 900 700	11,3 11,5 11,5

Checking values in brackets

* 1 mm less control rod travel than col. 2

D. Adjustment Test for Manifold Pressure Compensator

SAU 12,0 c

Test at n =

500

rev/min decreasing pressure – in bar gauge pressure XXXXXXXXX

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = ba	r Gauge pressure = bar	mm (1) .
3049 - 505	1,2 bar		11,5 - 11,6
		0,65	11,0 - 11,1
		0,32	8,2 - 8,6
		. 0	7,9 - 8,0

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Testoil-ISO 4113

40

WPP 001/4
1. Edition

En

PES 6 P 110 A 720/3 RS3036 RQV 300/600-900 PA453 K

supersedes

company:

Mack

engine:

ETA 676 E

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel injection Pump Settings

Port closing at prestroke

2,40-2,50

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ² /100 strokes 3	Spring pre-tension(ng (torque-control væve) mm 6
900	14,4	18,8-19,0				
300	5,5	1,1- 2,0				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	peed	-	Intermediat	e rated sp	eed	Lower rated	speed		Sliding	leeve travel
deflection	rev/min Control rod travel	Control rod travel	of control		Control rod travel	Degree of deflection of control		Control rod travel	Silving a	1
	mm	rev/min (2	lever	rev/min	mm 4	lever	rev/min	mm 3	rev/min	mm
1	2	3	4.	5	6	7	8	9	10	11
ca.66	970 1200		3 -	_	-	ca.18	100 300 400	3,8-5,2	600	1,2-2,4 4,5-5,0
ca.54	13,4 4,0		8			3 8	5/0	-630 =2,0	960	8,3

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ter		Rotational-speed 2b limitation intermediate speed	Fuel delin high idle :	very characteristics (5a)	Starting idle switching		Torque- travel	Control rod
rev/min	cm³/1000 strokes	rev/min 49	rev/min	cm ³ /1000 strokes	rev/min 6	cm ³ /1000 strokes	rev/min	travel mm
LDA 900	1,6 bar 187,5-189,5	940-950*	LDA 600 PLE 300	1,6 bar 227,0-231,0 79-99 0.740-0.820	100 300	110,0-170 13 - 22	8	

Checking values in brackets

* 1 mm less control rod travel then col. 2

D. Adjustment Test for Manifold Pressure Compensator

-2-

Test at n =

rev/min decreasing pressure - in bar gauge pressure

Setting	Measurement	diminution Control rog travel- difference
Gauge pressure = bar	Gauge pressure = bar	mm (1) .
0,46 - 0,52	1,33	

	,	
	Gauge pressure = bar	Gauge pressure = bar Gauge pressure = bar 0,46 - 0,52 1,33

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 SCA 11,0e1 1. Edition

En

PE 6 P 100/720 RS73 PE 6 P 90/720 RS75

EP/RSV 350-1100 P 1/310R

EP/RSV 350-1100 P 1/310R

supersedes company

11,0 e v. 5,71 Scania

engine

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke 2,6 + 0,1

estoil-ISO 4113

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm	Fuel delivery \$73 cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm	Fuel delivery S75 cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	13,6 - 14,2	0,6 0,4	12	8,5 - 9,2	S73:3,5±0,1**
600	9 12	6,3 - 7,3 12,3 - 13,5		9 12	2,9 - 4,2 7,4 - 8,4	(max.3,2-3,9) S75:2,5±0,1**
200	9	4,1 - 5,2		9	1,8 - 2,8	(max.2,2-2,9)

Adjust the fuel delivery from each outlet according to the values in alter the delivery-valve spring pre-tension alter the delivery-valve spring pre-tension

B. Governor Settings

350-1100 -

	r rated speed	rev/min Control rod	Intermediate rated speed			Lower rated speed			3 Torque control	
Degree of deflection of control	travel mm	travel				Control- lever deflection	rev/min	Control rod travel		Control rod travei
lever 1	2	3	4	5	6	in degrees 7	8	9	rev/min	11
ca.67	1100 1150	16,0 11,7	with	nout		ca.31	350	6,0	max.	
	1200	6,0		iliary	sprir	g	100	19 - 21		
	1150 1200	10,5-12,5 4,3- 7,8	MILL				350 420	5,7-6,3 2,0-4,0		
29	1300	0,3-1,0	'aux i	iliary	sprin	g	520	0,3-1,0		

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop emp. 40°C (104°F)	Rotational- speed limitat		uel delivery naracteristics	Starting I	fuel delivery 5	4e Idle stop	
rev/min	cm³/1000 strokes	changed to) rev/min	rev/min	cm³/1000 strokes 5	rev/min	cm#1000 strokes	rev/min	Control rod travel mm
1080	144,5-147,5	1120	600	139,0-143,0 di	100 350 ispersi	240-290 13-17 in.max.1,5)	350 **	6,0

Checking values in brackets

* 1 mm less control rod travel than col 2

4.78

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B. Governor Settings

1	r rated speed Control vi d travel mm		Intermed	diate rated	speed 6	Control- lever deflection in degrees 7	- Lower rev/min 8	rated speed Control rod travel mm	rev/min	rque control Control rod travel mm
ca.67	1100 1150 1200 1150 1200 1300	16,0 11,7 6,0 10,5-12,5 4,3- 7,8 0,3- 1,0	with	1 iary	•		350 100 350 420 520	6,0 19 - 21 5,7-6,3 2,0-4,0 0,3-1,0	max.	

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat.		nel delivery paracteristics	Starting t	ruel delivery 5	idle stop	
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	travel mm 9
1080	124,5-126,5	1120	600	113,0-117,0 dis	100 350 spersio	210-260 9 - 13 n.max.1,5)	350 **	6,0

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod trevel than col. 2

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm				Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	Torque control Control rod travel mm 10 11	
									
29									

C. Settings for Fuel Injection Pump with Fitted Governor

Il-load stop emp. 40°C (104°F)	Rotational-speed limitat. See Characteristics			Starting fuel delivery 5 Idle stop			
cm ³ /1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
							·

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4

MB 11.8 b 1

1. Edition

En

PE 6 P 110/720 RS176

EP/RSV 300-1100 P 1/303R (1) 350-750 P 4/397R (2) supersedes 11,8b-5,74
Company Daimler-Benz
OM 355 (A)

(1) Schmidt rotary snow plough

(2)Generating sets

A. Fuel Injection Pump Settings

Port closing at prestroke

(2,75-2,95)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

mm (from BDC)

Rotational speed rev/min 1	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm	Fuel delivery cm ⁹ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	11,3 - 12,3	0,4			
600	9 15	4,3 - 5,5 15,5 - 17,2		,		
200	9	2,6 - 3,6				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

..303R (1)

(1) Uppe	er rated speed		Interme	Intermediate rated speed			Lower rated speed			orque control
Degree of deflection of control lever 1	control rod travel mm	Control rod travel mm rev/min	4	5	6	Control- lever deflection in degrees 7	rev/min	Control rod travel mm	rev/min	Control rod travel mrn
ca.60	1100 1150	16,0 11,0	with			ca.24	300	7,0	1080	0
29	1200	4,0 6,2-10,2 4,5- 8,6 0,3- 1,0	with	liary liliary			300	19 - 21 6,7-7,3 1,8-4,1 0 - 1	300	0,7-1,3

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat Speed limitat Speed limitat			Starting t	fuel delivery 5	4a Idle stop	
Test oil to rev/min 1	emp 40°C (104°F) cm³/1000 strokes 2	Note: changed to .) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min	cm ⁴ 1000 strokes	rev/min	Control rod travel mm
(1) 1100	134,5-136,5	1120			100	ca.170,0		

Checking values in brackets

* 1 mm less control rod travel than col 2

7.78

BOSCH

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B. Governor Settings

	2070	101
•	.397R	(4)

	r rated speed Control rod travel mm		Interned	iate rated	speed	Control- lever deflection in degrees 7	rev/min	rated speed Control rod travel mm 9	(3) To rev/min 10	rque control Control rod travel mm
ca.44	750 800 825	16,0 8,6		out au	xiliaı	ca.23	350 200 350	6,0 19 - 21 5,9-6,1		**
ca.42	750 765 840	4,0 ca.11,0 ca. 3,8 0,1-1,0	sprir with sprir	aux il	iary		400	0 - 1		

C. Settings for Fuel Injection Pump with Fitted Governor

	amp. 40°C (104°F)	Rotational- speed limitat. Note: changed to) rev/min	39 Fu	el delivery aracteristics cm³/1000 strokes	Starting fidle	uel delivery 5 cm³/1000 strokes	idle stop Control rod travel rev/min	
(2) 730	135,0-138,0	3 750-760*	780-	s 800:3,8mmRW	6	7	8	9

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	Intermediate rated speed			Lower rev/min 8	rated speed Control rod travel mm	3 To	rque control Control rod travel mm
		·								
29										

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational-speed limitat. 3a Fuel delivery characteristics			Starting f	ruel delivery 5	(4a) Idi		
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm	
			•						
				•					

Checking values in brackets

^{**} Set idle-speed auxiliary spring at 2 mm control-rod travel then turn back 1/2 turn.

Test Specifications Fuel Injection Pumps (1A) and Governors

WPP 001/4 SCA 11,0 e 3. Edition

En

PE 6 P 100/720 RS31 PE 6 P 100/720 RS31Y

EP/RSV 350-1100 P 1/307R EP/RSV 350-900 P 1/307R

supersedes company engine

5.71 Scania DS 11

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,4+0,1 -31Y,V mm (from BDC)

Rotational speed	Control rod travel	Fuel delivery	Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm ³ /100 strokes 3	cm³/ 100 strokes 4	mm 2	cm³/100 strokes	mm 6
1000	12	13,6 - 14,2	0,6			3,5±0,1**
600	9 12	6,3 - 7,3 12,3 - 13,5				—(max.3,2-3,9)
200	9	4,1 - 5,2				

Adjust the Interconcesses of outpress terms of species on alter the delivery-valve spring pre-tension accordingly. **B. Go rnor Settings** 350-1100 -

	r rated speed Control rod travel mm		Interme	ediate rate	d speed	Control- lever deflection in degrees	Low rev/min	Control rod travel mm	3 To	rque control Control rod travel mm
ca.67	1100 1150 1200	16,0 11,7 6,0	with auxi	out liary	spring	ca.31	350 100 350	6,0 19 - 21 5,7-6,3	1100 500	0
2a	1150 1200 1350	10,4-12,5 4,4- 7,8 0,3- 1,0	with				400 550	3,2-4,7 0 - 1	300	1,2-1,8

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop	Rotational- speed limitat	Starting t	Starting fuel delivery 5				
rev/min	emp. 40°C (104°F) cm\$/1000 strokes 2	Note: changed to .) rev/min 3	rev/min	cm³/1000 strokes	rev/min	cm#1000 strokes	rev/min	Control rod travel mm
1080	144,5-147,5	1120	600	139,0-143,0	100 350 dispersio	240-290 13 - 17) n.max.1,5)	350 **	6,0

Checking values in brackets

* 1 mm less control rod travel than col 2

4.78

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B. Governor Settings

350-900 - 31y

	r rated speed Control rod travel mm	Control rod travel mm rev/min	Intermed	diate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm	11 9)	rque control Control rod travel mm
ca.52	900 950 1000 980 1000 1150	16,0 12,0 7,0 7,8-10,6 4,2-8,8 0,3-1	with	out I iary I iary	·		350 100 350 400 500	6,0 19 - 21 5,7-6,3 3,0-4,5 0 - 1	880 500 380	0 0 1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	6 Rotational- speed limitat.		el delivery aracteristics	Starting f	uel delivery 5	49 Idle stop	
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min	cm³/1000 strokes 7	rev/min 8	Control rod travel mm
900	160,5-163,5	920		dis	100 350 ersio	240 - 290 13 - 17 ₎ , n.max.1,5		6,0

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than act ?

B. Governor Settings

350-900 - 31V

1	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Intermed	liate rated	speed	Controi- lever deflection in degrees 7		rated speed Control rod travel mm	3 To	rque control Control rod travel mm
ca.52	900 950 1000	16,0 12,0 7,0	with auxi		sprin	ca.28	350 100	6,0 19 - 21	J80	0
②		7,8-10,6 4,2-8,8 0,3-1	 with		sprin		350 400 500	5,7-6,3 3,0-4,5 0 - 1	500 380	0 1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp. 40°C (104°F)	6 Rotational- speed limitat.		nel delivery paracteristics	Starting I	fuel delivery 5	Idle stop	
rev/min 1	cm³/1000 strokes 2	changed to) rev/min 3	rev/min 4	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	travel mm 9
900	158,5-161,5	920		. di	100 350 spers id	240-290 13 - 17 n.max.1,5	350 **	6,0

Checking values in brackets

Test Specifications Fuel Injection Pumps (A) and Governors

WPP 001/4 SCA 11,0 1 2. Edition

En

PE 6 P 100/720 RS146

EP/RSV 350-1100 P 1/310 350-1100

supersedes 12.71 Scania

RS146Y RS146Z

350- 900

DS 11 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $2,6 \pm 0,1$

Testoil-ISO 4113

mm (from BDC)

Y = 2,4+0,1

Rotational speed			Difference	Control rod travel	Fuel delivery	Spring pre-tensioning (torque-control valve)
rev/min	mm 2	cm³/100 strokes	100 strokes	mm 2	cm ⁹ /100 strokes	mm
1000	12	11,6 - 12,1	0,5		3	6 2,5±0,1**
600	9 12	8,7 - 4,9 9,5 - 10,9				(max.2,2-2,9)
200	9	2,4 - 3,4				

Agiust the lue deliver, from each outlet according to the values in alter the delivery-valve spring pre-tension

B. Governor Settings

350-1100 - 146

1 Uppe	r rated speed		interme	diate rate	d speed	(1)	Lowe	er rated speed	(3) To	rque control
Degree of deflection of control lever	Control rod travel mm	Control rod travel mm rev/min				Control- lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm
1	2	[3	4	5	6	7	8	9	10	11
ca.67	1100 1150	16,0 11,7				ca.31	350	6,0		
	1200	6,0	withoux i		spring		100	19 - 21	max.	
(2a)	1150 1200	10,4-12,5 4,4- 7,8	with				350 400 550	5,7-6,3 3,2-4,7 0 - 1		
<u> </u>	1350	0,3-1,0	auxı	lary	Shring					

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

W	ull-load stop	6 Rotational- speed limitat		iel delivery paracteristics	Starting t	fuel delivery 5	4a Idle stop	
rev/min	emp 40°C (104°F) cm ² /1000 strokes 2	Note changed to) rev/min 3	rev/min	cm ⁹ /1000 strokes 5	rev/min	cm#1000 strokes	rev/min	Control rod travel mm
1100	159,0-161,0	1120	600		225 persio	190-240 10-12 n.max.1,5 40-42 n.max. 4)	350 **	6,0

Checking values in brackets

* 1 mm less control rod travel than col 2

4.78

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B. Governor Settings

1 Uppe	r rated speed	d rev/min Control rod	Intermediate rated speed			- Lower rated speed			3 Torque control		
Degree of deflection of control	travel mm	travel mm rev/min				Control- lever deflection	rev/min	travel mm	rav/min	Control rod travel	
lever 1	2	3	4	5	6	in degrees 7	8	9	10	11	
ca.67	1100	16,0				ca.31	350	6,0			
	1150 1200	11,7 6,0	with auxi		spring		100 350	19 - 21 5,7-6,3	max.		
		10,4-12,5	with	•	•		400	3,2-4,7			
29	1200 1350	4,4- 7,8 0,3- 1,0		liary	spring		550	0 - 1			

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	ili-load stop	Rotational- speed limitat. 3a Fuel delivery characteristics				fuel delivery 5	1 die stop	
rev/min	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/mir	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
1100	168,0-170,0	1120	600	163,0-166,0	100 225 dispers		350 **	6,0

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col 2

B. Governor Settings

350-900 **- 146**Z

Degree of deflection of control lever	r rated speed Control rod travel mm		Intermed	liate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	3 To	rque control Control rod travel mm 11
ca .62	900 950 1000 950 1000 1080	16,0 11,8 ·5,5 10,6-12,6 3,4- 7,6 0 - 1	with	out liary liary	·		350 100 350 400 460	6,0 19 - 21 5,7-6,3 1,2-3,7 0 - 1	880 450 370	0 0 1,2-1,8

C. Settings for Fuel Injection Pump with Fitted Governor

	ill-load stop	Rotational- speed limitat		uel delivery naracteristics	Starting I	fuel delivery 5	4a Idle stop	
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min 4	cm³/1000 strokes 5	rev/min 6	cm ³ /1000 strokes	rev/min 8	Control rod travel mm
900	155,0-157,0	920		•	100 225 dispersi	190-240 10- 12 pn.max.1,5	350 **	6,0

Checking values in brackets En

Test Specifications Fuel Injection Pumps (A) and Governors

40

WPP 001/4 SCA 14,0 d 1. Edition

PE 8 P 110 A920/4 LS 3038 EP/RSV 350-1

EP/RSV 350-1100 P 1/371R

supersed∈s

.. LS 3055

P 1/371R

company

Scania (295kW - 101PS)

engine DS 14

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

(3,25-3,45)

mm (from BDC)

Rotational speed rev/min 1	travel	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery	Spring pre-tensioning (torque-control valve) mm
1000 350	13,4 +0,1 4,0-4,1	16,3 - 16,5 0,7 - 1,1	0,4(0,8)	13,5 +0,1 6,3-6,4	16,3 - 16,5 0,7 - 1,1	2,5±0,1**
600		C, 4-5	0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in the case of greater dispersion alter the delivery-valve spring pre-tension

									37	1 303
Degree of deflection of control lever	Control rod travel mm	d rev/min Control rod travel mm rev/min 3	Intern	nediate rai	ed speed	Control- lever deflection in degrees 7	Lowe rev/min 8	Control rod travel mm	3 To	Control rod travel mm
loose	800	0,3-1,0				ca.31	350	4,0	-	•
ca.67	x = 12,4 4,0 1270	5,2 1140-1150 1200-1240 0,3 -1,7					100 350 385-41 500	min.19 4,4-4,6 5 = 2,0 0 -		·

The numbers denote the sequence of the tests

C. Settings for Fuel Injection Pump with Fitted Governor

	ull-load stop emp. 40°C (104°F)	Rotational- speed limitat		uel delivery paracteristics	Starting t	fuel delivery 5			
rev/min	cm ³ /1000 strokes	changed to) rev/min	rev/min	cm³/1000 strokes	rev/min	cm#1000 strokes	rev/min	Control rod travel mm	
1000	163,0-165,0 (160,0-168,0)	1140-1150*	600	164,0-168,0 (161,0-171,0)	100 350 dispers	190-240 4,0mm RW on max.2(4))**		
					•			./.	

Checking values in brackets

* 1 mm less control rod travel than col 2

2.79

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B. Governor Settings

371 - 3055

(1) Uppe	r rated speed		Intermediate rated speed			(4)	- Lower	rated speed	3 Torque control		
Degree of deflection of control lever	travel	Control rod travel mm rev/min				Control- lever deflection in degrees	rev/min	Control rod travel mm	rev/min	Control rod travel mm	
1	2	3	4	5	6	/	8	9	10	11	
loose	800	0,3-1,0				ca.31	350	5,8	•		
	х	= 5,2					100 350	min.19 6,3-6,4			
ca.67	12,5	1140-1150					525-585	= 2,0			
29	4,0 1350	1240-1275 0,3- 1,7					650	0 - 1			

C. Settings for Fuel Injection Pump with Fitted Governor

(2b) Fu	li-load stop	6 Rotational- speed limitat.		el delivery paracteristics	Starting fuel delivery 5 delivery Idle stop				
Test oit to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm ³ /1000 strokes 5	rev/min 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
1000	163,0-165,0 (160,0-168,0)	1140-1150*	600	164,0-168,0 (161,0-171,0) di	100 350 spersi	190-240 6,3-6,4mm on.max. 2	RW (4)		

Checking values in brackets

Testoil-ISO 4113

* 1 mm less control rod travel than col. 2

B. Governor Settings

Degree of deflection of control isver	r rated speed Control rod travel mm	rev/min Control rod travel mm rev/min 3	Interm	ediate rated	speed	Control- lever deflection in degrees 7	Lower rev/min 8	rated speed Control rod travel mm 9	I X - 7	rque control Control rod travel mm
		•								
29										

C. Settings for Fuel Injection Pump with Fitted Governor

	II-load stop	6 Rotational- speed limitat.	nal- nitat. Sa Fuel delivery characteristics			Starting fuel delivery 5 4 Idle stop			
Test oil to rev/min 1	emp. 40°C (104°F) cm³/1000 strokes 2	Note: changed to) rev/min 3	rev/min	cm³/1000 strokes 5	rev/mir: 6	cm ³ /1000 strokes 7	rev/min 8	Control rod travel mm 9	
			į	•					
						<u> </u>			

Checking values in brackets En

Test Specifications Fuel Injection Pumps 2 and Governors

VDT-WPP 001/4 2. Edition

PES 6 P 120 A 420 RS 297.

RQ 200/1100 PA 279D

3.80 supersedes

company:

Saurer

D 2 KUT

Testing with T nozzles and fuel lines 8x2x1000 Markering for start of pump delivery + 17° camshaft BTDC engine:

176 kW (240 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

3,3 - 3,4

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	25,1 - 25,8	1,0			
600	6 15	6,2 - 7,4 30,5 - 32,9				
200	6	1,8 - 2,8	-			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Checkin PRG che rev/min	Control rod		int Control rad travel	Test spec Control rad travel	rev/min	Idle spee Setting p rev/min 7	coint Control rod travel		cifications 5 Control rod travel mm	Torque o	Control rod 3
550	15,7-16,3	550	16,0	1120 1150 1200 1250	14,6-15,0 8,8-13,3 0 - 7,3 0	500	0	100 200 300 410	4,9-6,9	850 °	15,8-16,0 15,4-15,6 15,0-15,3

Torque-control travel on flyweight assembly dimension a =

0,3

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on ontrol lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics	Starting fuel delivery Idle speed Control		
rev/min	cm ³ /-1000 strokes	rev/min	rev/min 4	cm ³ /-1000 strokes	rev/min	red travel cm ³ /1000 strokes:// mm	
LDA 1100 LDA 1100 (incr	0,7 bar 206,0-208,0 0 bar 143,0-149,0 ease by 3,0 cm³)		LDA 700	0,7 bar 171,0-173,0	150	18,5 - 20,5	

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

500

rev/min decreasing pressure - in bar gauge pressure

297 -

279 D

Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure = bar	Gauge pressure = bar	mm (1)
297 - 279 D	0,33 - 0,36		- 0,1
		0,06 - 0,07	ca 1,8

Notes:

(1) when n =

1100

rev/min and page pressure 3-7

bar (= maximum full-load control rod travel)

Festoil-ISO 4113

VDT-WPP 001/4 BOS 12,3 f

2. Edition

PE 6 P 120 A 721 RS 217

RQ 250/1100 PA 131 DR (1) RQ 250/1050 PA 289 DR (2) supersedes

company: engine:

Büssing S 12 DA 62

Testing with T nozzles and fuel lines 8x2x1000

(1 - 320 PS)

(2 - 300 PS)

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

2.8 + 0.1

A. Fuel Injection Pump Settings

+0,15)

Port closing at prestroke

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm³/100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	19,6 - 20,4	0,8			
600	9 15	9,6 - 11,0 21,3 - 23,2				
200	9	5,0 - 6,2				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ .. 131 DR (1)

Checkin PRG che	g of slider ock	Full-load s Setting po	•	•	cifications (4)	Idl e spec	_		cifications (5)	Torque o	control 3
rev/min	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Control red travel rnm 5	rev/min 6	rev/min 7	Contral rod travel rnm 8		Control rod travel mm		Control rod travel mm 12
500	15,7-16,3	500	16,0	1120 1150 1200 1250	14,7-15,0 9,0-13,4 0 - 6,7 0		0	160 150 350 390	1 3-6 3	620 B20	15,8-16,0 15,0-15,2

Torque-control travel on flyweight assembly dimension a = 0,3

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp. 40°C (104°F)		Control rod stop 3a	Fuel deliv	ery characteristics	Starting fuel delivery Idle speed		
rev/min 1	cm ³ /-1000 strokes	rev/min	rev/min	cm³/-1000 strokes	rev/min	cm ³ /1000 strokes:/ mm	
(1- 1100	0,75 bar) 241,0-243,0		0,75 700	bar 202,0 - 206,0	100	ca. 16mm RW	
1100	0 bar 212,0-21 <u>6</u> ,0		500	199,0 - 205,0	100	Ca. Tollant NW	
(inc	rease by 3,0 cm³)						

Checking values in brackets

B Governor Settings

Checking of slider	Full-load speed regul	ation	idle speed regula	ition	Torque control
PRG check Control rod travel	Setting point Control Co red travel rev/min mm mm	est specifications 4) ontrol od travel nm rev/min	Setting point Control rev/min mm	Test specifications Control rod travel rev/min mm	Control rod (3) travel travel mm
500 15,7-16,3	1	070 14,3-14,8 100 6,5-12,5 130 0 - 8,0 180 0		150 6,6-8,0 250 4,5-6,5 350 1,0-3,3 420 0	750 15,7-16,0 950 14,8-15,0

Torque-control travel on flyweight assembly dimension a

0,35

Speed regulation At 1090-1105

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery on governor control lever Test oil temp 40°C (104 F)		Control rod stop	Fuel defiv	ery characteristics 3b	Starting fi	uel delivery 6
rev/min	cm ³ /-1000 strokes 2	rev/min 3	rev/min	cm ³ /- 1000 strukes 5	rev/min 6	cm ³ /1000 strokes / mm 7
1050	0,7 bar) 224,5-227,5		0,7 700 0 500	bar 193,5 - 198,5 bar 121,0 - 125,0	100	ca. 16 mmRW

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

Test at n =

rev/min increasing pressure - in bar gauge pressure

iest ain	increasing		
Pump/governor	Setting	Measurement	diminution Control rod travel- difference
	Gauge pressure bar	Gauge pressure = bar	mm (1)
217 - 131 D	0,23 - 0,26	0,43 - 0,47	ca. 5,2 mm
217 - 289 D	0,20 - 0,24	0,49 - 0,52	ca. 2,5 mm
			·
1			

Notes

1100

0,75

(1) when ก =

1050 rev/min and

0,7

gauge pressure =

bar (= maximum full-load control rod travel)

En

①

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ① and Governors

40

WPP 001/4 VOL 10,0i

1. Edition

PE 6 P 100 A 320 RS365

RQV 250-1100 PA 232/2R

supersedes

company:

Volvo TD 100 A

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke $\frac{2,60-2}{12,55-2}$

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm ³ / 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
700	13,0-13,1	14,5-14,8	0,4(0,6)			2,5+0,1** (max 2,2-2,9)
250 700	6,0-6,1 	1,0 - 1,4 C 4-5	0,2(0,5) 0,6(1,0)			

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

Upper rated s	i I		Intermediate	rated sp	rmediate rated speed			1	Sliding s	leeve travel
deflection	rev/min Control	Gontrol rod travel	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel		① •
of control lever	rod travel mm	rev/min 2a	of control lever	rev/min	mm ④	of control	rev/min	mm 3	rev/min	mm
1	2	3	4	5	6	17	8	9	10	11
ca.50	1100 1350	15,2-17,8 0 - 1	-	-	-	ca.12	100 250	min.9,0 6,0-6,1	250 430	1,1-1,2 4,4-4,6
ca.45	12,0 4,0	1140-1150 1250-1290					350-	380= 2,0	1140	8,2
						3 a				

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-ro Test oil ten		Rotational-speed 2b limitation intermediate speed	Fuel deliv	rery characteristics (56)	Starting Idle switching		Torque- travel	Control od
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm ³ /1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
LDA 700	0,5 bar 145,0-148,0 (143,0-150,0		LDA 700	0 bar 115,0-118,0 (113,0-120,0		220 - 260 11 - 15**		
								./.

Checking values in brackets

D. Adjustment Test for Manifold Pressure Compensator

VOL 10,0 i

Test at n =

rev/min decreasing pressure – in bar gauge pressure

Pump/governor	Setting	Measurement	diminution Control rod travet- difference
	Gauge pressure = ba	Gauge pressure = bar	mm (1) .
365 - 232/2	0,26	0,10	12,8 - 12,9 11,4 - 11,5
			,
			,
			6

Notes:

(1) when n =

rev/min and gauge pressure =

bar (= maximum full-load control rod travel)

** In the case of greater dispersion alter the delivery-valve spring pre-tension accordingly.

②

Test Specifications Fuel Injection Pumps 2 and Governors

40

VDT-WPP 001/4 DAF 11,6c 3. Edition

En

PE 6 P 110/320 RS 198

RQ 200/1100 PA 24 R RQV 200-1100 PA 37 R ./. EP/RSV 200-1100 P 1/326 R ./. supersedes

2.74 DAF

company: engine:

 $\binom{+0,15}{-0,05}$

DKA 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes 4	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm 6
1000	12	13,2 - 13,9	0,5			
600 600	9 12	6,4 - 7,6 13,2 - 14,7				
600	15 9	19,0 - 20,9 4,8 - 6,0				

Adjust the fuel delivery from each outlet according to the values in

Festoil-ISO 4113

B. Governor Settings

RQ 200/1100 PA24R

Check PRG c rev/mi	Control rod travel		cirit Control rad travel		rev/min	!dle spec Setting p rev/min 7	Control red travel	Test spe	cifications 5 Control rod travel mm	rev/min	Control rod	3
500	15,7-16,3	500	16,0	1120 1150 1180 1230	15,6-16,0 7,7-13,5 0 - 8,6 0		0	100 200 300 340	6,7-8,1 4,4-6,5 0 -2,2 0	-	-	

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod atco	Fuel deliv	Bry characteristics	Starting Idle spe	fuel delivery ed G
rev/min	cm ³ /-1000 strokes 2	ravimin 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min 6	cm ³ /1000 strokes./ mm
850	117,5 - 120,5 (115,5 - 122,5)				100	24,5 - 25,5

Checking values in brackets

-	
	Testoil-I
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l	<u>_</u>
ì	W

Upper rated s	peed			Intermediate	rated spe	ed	Ţ	Lower rated	speed	·	Sliding st	eeve travel
Degree of deflection	Control	Control rod travel	(a)	Degree of deflection		Control rod travel		Degree of deflection		Control rod travel		1
of control lever	rodtravel mm	rev/min	(2B)	of control lever	rev/min	mm (4		of control lever	rev/min	mm ③	rev/min	mm
1	2	3		4	5	6		7	8	9	10	11
ca.68	1100	14,8-17 10,2-14 5,7-10 0- 7	,2 ,4					ca.12	100 200 300 500 700	6,3-8,0 4,4-6,8 3,3-3,8 1,7-3,1 0	i e	

Torque control travel a =

mm

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min mm 1 2 3 4 5 6 7 8 9 See RQ	Control-rod stop	Rotational-speed (2b) Fuel delivery characteristics (5a) high idle speed (5b)			Starting Idle switchin		Torque- travel	control 5
see RQ	rev/min cm³/1000 strokes	rev/min 4a	rev/min	_	1	cm³/1000 strokes		**
								,
1120	see RQ	1120						

Checking values in brackets

* 1 mm less control rod travel than col. 2

B. Governor Settings

EP/RSV 200 - 1100 P 1/326

Upper rated s	peed		Intermedial	e rated spe	ed		Lower rated	speed		Sliding s	leeve travel
Degree of deflection of control	rev/min Control Irod travel	LIGACI (Degree of deflection of control	1	Control ro travel	d 🕡	Degree of deflection of control		Control rod travel		1
lever			2a) lever	rev/min	աա	(4)	lever	rev/min	mm (3)	rev/min	mm
1	2	3	4	5	6		7	8	9	10	11
ca.68	1100 1180 1220 1200 1240 1310	16,0 10,2 6,0 5,6-9,6 2,0-5,6		uxilia			ca.29	200 100 200 300 400	6,0 19 - 21 5,7-6,3 1,8-3,8 0 - 1	1080 200	0 0 0,3-0,5

Torque control travel a =

ma

C. Settings for Fuel Injection Pump with Fitted Governor

rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min cm³/1000 strokes rev/min mm 9 1120 In accordance with special nameplate on pump!	Full-load de Control-roo Test oil ten	1 -	Rotational-speed (2b) limitation intermediate speed (4a)	Fuel deln high idle s			g point	travei	Control rod travel
1120	rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/min	cm ⁹ /1000 strokes	rev/min	mm
	1	2	3	4	5	6	7	8	9
	In ac	cordance with		plate	on pump!				

Checking values in brackets

2

Festoil-ISO 4113

Test Specifications Fuel Injection Pumps ② and Governors

40

VDT-WPP 001/4 DAF 11,6 a 3. Edition

<u>En</u>

PE 6 P 110/320 RS 109

RQ 200/1100 PA 24 R RQV 200-1100 PA 37 R EP/RSV 200-1100 P1/326 R supersedes

8.72

company:

van Doorne

engine:

DKA 1160

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,8 + 0,1

mm (from BDC)

Rotational speed rev/min	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Difference cm³/ 100 strokes	Control rod travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-sontrol valve) mm 6
1000	12	13,2-13,9	0,5			
600 600	9 12	6,4- 7,6 13,2-14,7				
600 - 200	15 9	19,0-20,9 4,8- 6,0				

Adjust the fuel delivery from each outlet according to the values in

B. Governor Settings

RQ .. PA 24 R

Checkin	g of slider	Full-load s	peed re	gulation	_	idie spec	ed regula	ation		Torque control		
PRG che	ock (1)	Setting po	int	Test spec	cifications (4)	Setting p	oint	Test spe	cifications (5)			3
rev/min	Control rod travel mm 2	rev/min 3	Control rod travel mm 4	Centrol rad travel mm 5	rev/min 6	rev/min 7	Control rod travel mm 8	rev/min 9	Control rod travel	rev/min 11	Control rod travel mm 12	
	15,7-16,3 kaway not re n=1120	500	16,0	1100 1140 1170 1210	15,7-16,0 4,8-12,4 0 - 7,2 0		0	100 200 300 390	6,9-8,1 4,4-6,4 1,6-3,8 0	•	-	

Torque-control travel on flyweight assembly dimension a =

mm

Speed regulation: At

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	lelivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting t	. •
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rev/min 4	cm ³ /-1000 strokes 5	rev/min	Control red travel cm ³ /1000 strokes: mm
1090	118,0 - 120,0	1120			.100	ca.24
(inc	rease by 1,0 cm²)					./.

Checking values in brackets

11.75

BOSCH

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Testoil-ISO 4113

Upper rated s	peed			Intermediate	rated spe	ed	Lower rated	speed		Sliding sleeve travel		
Degree of deflection of control lever		Control rod travel mm rev/min		Degree of deflection of control lever	rev/min		Degree of deflection of control lever	rev/min	Control rod travel mm 3	rev/min	mm	
ca.68	1100 1150 1200 1240 1320	14,8-1; 10,2-14 5,7-10 0 - 3	1,2		5	6	ca.12	100 200 300 500 700	6,3-8,0 4,4-6,8 3,3-3,8 1,7-3,1	_	•	

Torque control travel a =

B. Governor Settings

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	stop	Rotational-speed (2b) limitation intermediate speed	Fuel deliv high idle s	ery characteristics (58)	Starting Idle switching		Torque- travel	Control cod
rev/min	cm ³ /1000 strokes	rev/min 48	rev/min	cm ³ /1000 strokes	l _	cm3/1000 strokes	rev/min	travel mm
1	2	3	4	5	6	7	8	9
1090	118,0-120,0	1120			100	ca. 24		

Checking values in brackets

B. Governor Settings

EP/RSV ..326

Upper rated s	peed	,		Intermediate	rated spe	ed	Lower rated	speed			 Slidina sl	ecve travel
deflection		Control rod	(la)	Degree of deflection	1	Control roc travel	Degree of deflection of control	ı	Control ro travel			0
of Control lever	rod travel	ten/win	(2a)	of control lever	rev/min	mm	 lever	rev/min	mm	3	rev/min	mm
11	2	3		4	5 .	6	7	8	9		10	11
ca.68	1100	16,0					ca.29	200	6,0		1080	0
	1180 1220	10,2 6,0	_	without spring		iary		100 200	19 - : 5,7-6		350	0
	1200 1240 1310	5,6-9,0 2,0-5,0 0 - 1		with au	xilia	гу		300 400	1,8-3 0 -		200	0,3-0,5
				- F3			 3 9					

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load d Control-roo Test oil ten		Intermediate speed	Fuel deliv high idle s	rery characteristics 5a peed 5b	Starting idle switchin		Torque- travel	Control roc
rev/min	cm ³ /1000 strokes	rev/min	rev/min	cm ³ /1000 strokes	rev/m:n	cm ⁴ /1000 strokes	rev/min	travel
1	2	3	4	5	6	7	8	9 A
In a	cordance with	special name	plate	on pump!				
					,	•		

Checking values in brackets

^{* 1} mm less control rod travel than col. 2

estoil-ISO 4113

Test Specifications Fuel Injection Pumps (2) and Governors

WPP 001/4 SCA 8,0 a 3. Edition

12.72

PE 6 P 100/720 RS140

250/1250 PA102R

RQV 200-1200 PA101R

PE 6 P 100 A720 RS201

RQV 200-1200 PA170R EP/RSV 350-1200 P1/310R ./. company: Scania **DS 8** engine:

supersedes

Port-closing test with/without ROBO diaphragm

All test specifications are valid for Bosch Fuel Injection Pump Test Benches and Testers

A. Fuel Injection Pump Settings

Port closing at prestroke

2,5 + 0,1mm (from BDC)

nm !	cm ³ /100 strokes 3	cm ³ / 100 strokes 4	travel mm 2	Fuel delivery cm ³ /100 strokes 3	Spring pre-tensioning (torque-control valve) mm
13,5	12,2-12,6	0,5			2,5 ± 0,1**
13,5	11,3-11,7				(max. 2,2-2,9)
6	1,0-1,2				
6	2,9- 3,4				
	13,5 13,5 6	13,5 12,2-12,6 13,5 11,3-11,7 6 1,0-1,2	3 4 13,5 12,2-12,6 0,5 13,5 11,3-11,7 6 1,0-1,2	3 4 2 13,5 12,2-12,6 0,5 13,5 11,3-11,7 6 1,0-1,2	3 4 2 3 13,5 12,2-12,6 0,5 13,5 11,3-11,7 6 1,0-1,2

Adjust the ind delivery tangeach futgreestern tempersion alter the delivery-valve spring pre-tension accordingly.

B. Governor Settings

RQ.. 102R

Checkin PRG che rev/min 1	Control rod	Full-load s Setting po rev/min 3			rev/min	Idle spec Setting p rev/min 7	Control rod travel	Test s/pe rev/min	cifications (5) Control roci travel mm	Torque o	Control rod	3
750	15,6-16,4	750	16,0	1270 1320 1380 1420 1500	15,6-16,0 10,3-14,4 3,5-10,0 0 - 7,8 0		0	180 250 400 500 630	7,0-8,1 5,5-6,8 2,9-4,4 1,3-2,8 0			

Torque-control travel on flyweight assembly dimension a =

1 mm less control rod travel

C. Settings for Fuel Injection Pump with Fitted Governor

	elivery on control lever np. 40°C (104°F)	Control rod stop 3a	Fuel deliv	ery characteristics 3b	Starting f	. —
rev/min 1	cm ³ /-1000 strokes 2	rev/min 3	rėv/min 4	cm ³ /-1000 strok es 5	rev/min 6	Centrel red travel cm ³ /1000 strokes:/ mm
1200	123,0-125,0 (13,5±0,5mmRW)		600	disp	100 225 ersior 1300 ersion	190 - 240 11 - 13 max.1,5)** 29 - 34 max. 4)

Checking values in brackets

Testoil-ISO "

		00111113	-								
Upper rated s	peed		- 1	Intermediate	rated spe	ed	Lower rated	speed		Sliding el	eeve travel
deflection	Control	travel	7	Degree of deflection		Control rod travel	Degree of deflection		Control rod travel	chomy s	1
of control lever	rodtravel mm	rev/min (2		of control lever	rev/min	mm (4)	of control lever	rev/min	mm (3)	rev/min	mm
1	2	3		4	5	6	7	8	9	10	11
ca.66	1240 1300 1450 1590	15,0-17, 11,3-14, 0,6- 7, 0	9	•		-	ca.10	100 250 400 530	6,4-8,0 3,9-6,0 1,7-3,2 0	300 600 1240	1,6-2,4 4,3-4,6 8,2
							3a)				

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load de Control-rod Test oil tem	l stop	Rotational-speed (2b) limitation intermediate speed	Fuel deliv	speed 5b	'Ildie	fuel delivery 6	Torque- travel	-control 5
rev/min	cm ³ /1000 strokes	rev/min 4a	rev/min	cm ³ /1000 strokes	rev/min	cm3/1000 strokes	rev/min	travel mm
1	12	3	4	<u> </u>	<u></u>	<u> </u> 7	<u> </u>	9
1200 (13,5	123,0-125,0 ± 0,5mm RW)	1230-1240*	600		225	11 - 13 ion.max.1,5) 29 - 34,	**	

iues in brackets Check

* 1 mm less control rod travel than col. 2

B. Governor Settings

EP/RSV310R	ΕP	/RSV	31	IOR
------------	----	------	----	-----

Upper rated	speed			Intermediate	rated spe	ed		Lower rated	speed			Sliding st	eeve travel
Degree of deflection of control lever	rod travei	mm	(1a) (2a)	Degree of deflection of control laver	rev/min	Control ro travel mm		Degree of deflection of control lever	rev/min	Control travel mm	rod 3	rev/min	mm
ca./1	1200 1250 1300 1250 1320 1420	16,0 11,9 6,3 10,8-12 2,4-6 0,3-1	,0	withou auxili with auxili	ary si	ring	•	ca.31	350 100 350 400 520	6,0			· ·

Torque control travel a =

C. Settings for Fuel Injection Pump with Fitted Governor

Full-load delivery Control-rod stop Test oil temp 40°C (104°F)		Rotational-speed (2b) imitation intermediate speed	Fuel delivery Caracteristics 56 high idle speed 56		Starting fuel delivery 6 Idle switching point		Idle Control roo	
rev/min	cm ³ /1000 strokes	rev/min 4a)	rev/min	cm ³ , 1000 strokes 5	rev/min 6	cm ⁴ /1000 strokes 7	Stop rev/min 8	travel mm 9
1200 (13,5	123,0-125,0 ±0,5 mmRW)	1230-1240*	600			- 10 - 14 9n.max.1,5)** 34 - 44 9n.max. 4)	350	6,0

Checking values in brackets